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OF

WESTERN WATER LAW

BY

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PREFACE

The following chapters were published as separate articles in the Journal of Electricity, Power and Gas. They present in abbreviated form part of a course in "Irrigation Institutions" given to advanced students in the Colleges of Agriculture and Civil Engineering of the University of California.

As the western law of waters has been developed by the courts it is necessary to quote freely from the cases, although the text is intended for those untrained in jurisprudence.

Owing to the restricted space available for the articles as first published, only the leading cases on each point have been cited, but an attempt has been made to refer to important cases not following the established rule.

So great is the public interest in our water resources today that no explanation is deemed necessary for the publication of a book on a legal topic to be read by laymen.

A. E. CHANDLER.

San Francisco, December, 1912.

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EARLY DEVELOPMENT OF THE DOCTRINE OF APPROPRIATION.

The doctrine of appropriation is one recognized in the law of waters as governing a class of rights markedly distinct from the riparian rights of the common law. It grew out of the occupancy of the public domain during the mining period and is not accepted outside of the western mining and irrigation States. Although of so recent origin as far as our own people are concerned, the following quotation from Clough v. Wing (2 Ariz. 371) shows its long standing in America:

> And the right to appropriate and use water for irrigation has been recognized longer than history, and since earlier times than tradition. Evidences of it are to be found all over Arizona and New Mexico in the ancient canals of a prehistoric people, who once composed a dense and highly civilized population. These canals are now plainly marked, and some modern canals follow the track and use the work of this forgotten people. The native tribes, the Pimas and Papagos and other pueblo Indians, now, as they for generations have done, appropriate and use the waters of these streams in husbandry, and sacredly recognize the rights acquired by long use, and no right of a riparian owner is thought of. The only right in water is found in the right to conduct the same through their canals to their fields, there to use the same in irrigation. The same was found to prevail in Mexico among the Aztecs, the Toltecs, the Vaquis, and other tribes at the time of the conquest, and remained undisturbed in the jurisprudence of that country until now. Clough v. Wing, 17 Pac. 453.

As was to be expected from the great rush to the gold fields following the discovery in January, 1848, legal controversies early arose not only in regard to the mining claims but also in regard to the ditches and water rights used in connection therewith. One

of the very early cases often quoted is Irwin v. Phillips (5 Cal. 140) decided in 1855 and the following extract from the opinion clearly shows the necessity for the doctrine of prior appropriation:

Courts are bound to take notice of the political and social condition of the country which they judicially rule. In this State the larger part of the territory consists of mineral lands, nearly the whole of which are the property of the public. No right of intent of disposition of these lands has been shown either by the United States or the State governments, and with the exception of certain State regulations, very limited in their character, a system has been permitted to grow up by the voluntary *occupation* of the mineral region has been *tacitly assented to* by the one government, and heartily *encouraged* by the expressed legislative policy of the other. If there are, as must be admitted, many things connected with this system, which are crude and undigested, and subject to fluctuation and dispute, there are still some which a universal sense of necessity and propriety have so firmly fixed as that *they have come to be looked upon as having the force and effect of res judicata.* Among these the most important are the rights of miners to be protected in the possession of their selected localities, and the rights of those who, by prior appropriation, have taken the waters from their natural beds, and by costly artificial works have conducted them for miles over mountains and ravines, to supply the necessities of gold diggers, and without which the most important interests of the mineral region would remain without development. So fully recognized have become those rights, that, without any specific legislation conferring or confirming them, they are alluded to and spoken of in various acts of the legislature in the same manner as if they were rights which had been *vested* by the most distinct expression of the will of the lawmakers * * * This simply goes to prove what is the purpose of the argument, that however much the policy of the State, as indicated by her legislation, has conferred the privilege to work the mines, it has equally conferred the right to divert the streams from their natural channels, and as these two rights stand upon an equal footing, when they conflict, they must be decided by the fact of priority, upon the maxim of equity, *"Qui prior est in tempore, potior est in jure."*

Elsewhere in the above mentioned opinion it is stated:

It must be premised that it is admitted on all sides that the mining claims in controversy, and the lands through which the stream runs and through which the canal passes, are a part of the public domain, to which there is no claim of private proprietorship.

The miners and others were but trespassers on the public domain as Congress had passed no legislation recognizing their claims. It is not surprising that a movement gained weight in the Eastern States to have the government assert its ownership to the mines and ditches and other developed works on the public lands. As far as the West is concerned, therefore, the then critical situation was happily relieved by the passage of the famous Act of 1866 which is now Section 2339 of the Revised Statutes of the United States and reads as follows:

Whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes herein specified is acknowledged and confirmed; but whenever any person, in the construction of any ditch or canal, injures or damages the possession of any settler on the public domain, the party committing such injury or damage shall be liable to the party injured for such injury or damage.

In 1870 the section which is now Section 2340 of the Revised Statutes and which is generally construed with Section 2339, was passed. It is as follows:

All patents granted, or pre-emption or homesteads allowed, shall be subject to any vested and accrued water-rights, or rights to ditches and reservoirs used in connection with such water-rights as may have been acquired under or recognized by the preceding section.

It is to be noted that by the two sections above quoted not only were the water rights which had vested and accrued recognized, but also the rights of

way for ditches and reservoirs in connection therewith.

The first noteworthy judicial construction of the Act of 1866 was by the Supreme Court of Nevada in the case of Van Sickle v. Haines (7 Nev. 249) decided in January, 1872. Both parties were the owners in fee of their respective lands. Haines' patent was dated December 28, 1864, and long prior thereto Van Sickle had diverted part of the waters of Daggett Creek, which diversion was interfered with by Haines in December, 1867, under the claim of riparian ownership. The lower court rendered judgment in favor of Van Sickle on the grounds of prior appropriation, but the Supreme Court held that such rights of appropriation were inferior to the riparian rights of Haines and reversed the decision. In reference to the Act of 1866, the Supreme Court said:

> The Act of Congress of July, 1866, if it shows anything, shows that no diversion had previously been authorized, for if it had whence the necessity of passing the Act, which appears simply to have been adopted to protect those who at that time were diverting water from its natural channel?
>
> Doubtless, all patents issued, or titles acquired from the United States, since July, 1866, are obtained subject to the rights existing at that time, but this is a different case, for if the appellant has any right to the water, he acquired it by the patent issued to him two years before that time, and with which, therefore, Congress could not interfere.

On May 28, 1872, the Federal Circuit Court for Nevada decided the case of Union Mill & Mining Co. v. Ferris (2 Saw. 176). The mill company, as a riparian owner, brought the action to enjoin Ferris and other farmers in the Upper Carson Valley from diverting the waters of Carson River. Regarding the Act of 1866 the court said:

> For seventeen years prior to 1866, the mineral land of California and Nevada had been occupied by the citizens of the United States, without objection on the part of the government. Canals and ditches were dug at this time, often at great ex-

pense, over the public lands, and the water of the streams diverted by these means for mining and other purposes. Local customs grew up in the mining districts, by common consent, and by rules adopted at miners' meetings for governing the location, recording and working of mining claims in the particular mining district. Possessory rights to public lands, mining claims and water were regulated by State statutes, and enforced by the State courts. * * *

But the Act is prospective in its operation, and cannot be construed so as to divert a part of an estate granted before its passage. If it be admitted that Congress has the power to divest a vested right by giving a statute a retrospective operation, that interpretation will never be adopted without absolute necessity.

To appreciate the seriousness of the two Nevada decisions above mentioned, it must be remembered that by the construction therein given, one who received patent prior to July, 1866, for riparian land could enjoin diversions above him to non-riparian lands no matter how long such diversions had existed; and also that any one who secured patent prior to July, 1866, to land crossed by a ditch became the owner of such ditch, or at least could stop its operation.

Fortunately for the early investors the Supreme Court of the United States did not adopt the Nevada Court's view, as is clearly shown in the case of Broder v. Natoma Water & Mining Company (101 U. S. 274) decided October, 1879. The water company had constructed a ditch at an expense of about $200,000 in 1853 on lands then public. Part of the land crossed was within the Central Pacific Railroad grant under the Act of 1864 and Broder became the owner thereof and brought the action to have the canal declared a nuisance and to recover $12,000 damages on account of its maintenance on the land. In construing the provisions of the Act of 1866 in its bearing upon the case, the Court said:

In reference to his lands held under conveyance from the railroad company, it might be a question of some difficulty whether the right was so far vested in that company before

the passage of this Act of 1866, that the latter would be ineffectual as regards these lands. But we not think that the defendant is under the necessity of relying on that statute.

It is the established doctrine of this court that rights of miners, who had taken possession of mines and worked and developed them, and the rights of persons who had constructed canals and ditches to be used in making operations and for purposes of agricultural irrigation, in the region where such artificial use of the water was an absolute necessity, are rights which the government had, by its conduct, recognized and encouraged and was bound to protect, before the passage of the Act of 1866. We are of opinion that the section of the Act which we have quoted was rather a voluntary *recognition of a pre-existing right of possession,* constituting a valid claim to its continued use, than the establishment of a new one. This subject has so recently received our attention, and the grounds on which this construction rests are so well set forth in the following cases, that they will be relied on without further argument.

The Broder v. Natoma Water Company decision has continued to be the accepted construction of the Act of 1866, and what uncertainty may have arisen from the Nevada decisions was thus removed.

As the first appropriations on the public domain were by the miners, it became the custom to initiate water rights by posting notices similar to those used for the mineral claims. The fact that the notice in the case of the water claim could hardly be seen except by accident and was therefore not like the mining notice which could be seen by all prospectors passing the mineral claim, did not appeal to the early miners and has failed to impress our California legislators early or late. The water claims posted in accordance with custom were recorded in the county records long prior to any legislation authorizing or requiring such recordation.

Reference has been made to Irwin v. Phillips and the rule of prior appropriation. In the following year, 1856, the case of Conger v. Weaver (6 Cal. 548) was decided and established, as between claimants on government land, the doctrine of relation in regard to appropriations in the following words:

But, from the nature of these works, it is evident that it requires time to complete them, and from their extent, in some instances, it would require much time; and the question now arises, at what point of time does the right commence, so as to protect the undertaker from the subsequent settlements or enterprises of other persons. If it does not commence until the canal is completed, then the license is valueless, for after nearly the whole work has been done, any one, actuated by malice or self-interest, may prevent its accomplishment; any small squatter settlement might effectively destroy it.

But I apprehend that, in granting the license which we have presumed for the purpose before us, the State did not intend that it should be turned into so vain a thing, but designed that it should be effectual for the object in view; and it consequently follows that the same rule must be applied here to protect this right as in any other.

So, in the case of constructing canals, under the license from the State, the survey of the ground, planting stakes along the line, and actually commencing and diligently pursuing the work, is as much possession as the nature of the subject will admit, and forms a series of acts of ownership which must be conclusive of the right.

In an earlier case, Eddy v. Simpson (3 Cal. 252) decided in 1853, it was said:

It is laid down by our law writers, that the right of property in water is usufructuary, and consists not so much of the fluid itself as the advantage of its use. * * * The right is not in the *corpus* of the water, and only continues with its possession.

The general principles of prior appropriation were thus established by the California Supreme Court in the fifties. As new cases arose they were enlarged upon and strengthened, so that when the legislature did finally act upon this subject in 1872 the sections adopted were but declaratory of the existing law. The sections then enacted are 1410 to 1422 of the Civil Code and still remain, with slight amendments, the only statutory provisions on appropriation of water, with the exception of special legislation regarding appropriations for power purposes adopted at the regular and special sessions of 1911.

Section 1415, providing for notices of appropriation, and Section 1416, providing for prosecution of the work, are as follows:

SECTION 1415. *Notice of Appropriation.* A person desiring to appropriate water must post a notice, in writing, in a conspicuous place at the point of intended diversion, stating therein:

1. That he claims the water there flowing to the extent of (giving the number) inches measured under a four-inch pressure;

2. The purposes for which he claims it, and the place of intended use;

3. The means by which he intends to divert it, and the size of the flume, ditch, pipe, or aqueduct in which he intends to divert it.

A copy of the notice must, within ten days after it is posted, be recorded in the office of the recorder of the county in which it is posted.

After filing such copy for record, the place of intended diversion or the place of intended use or the means by which it is intended to divert the water, may be changed by the person posting said notice or his assigns, if others are not injured by such change. This provision applies to notices already filed as well as to notices hereafter filed.

SECTION 1416. Within sixty days after the notice is posted, the claimant must commence the excavation or construction of the works in which he intends to divert the water, or the survey, road or trail building, necessarily incident thereto, and must prosecute the work diligently and uninterruptedly to completion, unless temporarily interrupted by snows or rain; provided, that if the erection of a dam has been recommended by the California Debris Commission at or near the place where it is intended to divert the water, the claimant shall have sixty days after the completion of such dam in which to commence the excavation or construction of the works in which he intends to divert the water; provided, that whenever any city and county, * * * (A proviso added in 1911 to relieve cities and towns from the necessity of prosecuting the construction work with the diligence required of other appropriators.)

Section 1418 provides that the water right will relate back to the time of posting notice on compliance with above rules.

Section 1422 provides that when the "place of intended diversion or any part of the route" is within a national park, forest reserve or other reservation, the claimant shall have sixty days from the date of approval of his application to occupy such national park, etc., within which to commence work as provided in Section 1416.

As stated above, under the doctrine of relation laid down in Conger v. Weaver, the right to appropriate water, after the completion of the diversion works with reasonable diligence, dated back to the first steps taken in regard thereto. The statute in Section 1418, fixes this first step as the posting of the notice (Section 1415). It is now well settled (Wells v. Mantes, 99 Cal. 583) that the statute need not be followed in order to make a valid appropriation in California (except for power purposes under the 1911 statute which is not under consideration in the present article), but by failure to follow the statute the benefit of the doctrine of relation is lost and the right dates back only to the completion of the work. There is therefore nothing to be gained and much to be lost by not following the statute.

As is shown by Sections 1415 and 1416 there is no public officer in California concerned in the form or contents of the notice of appropriation and the consequent construction work. Our county records abound in notices under which no construction or survey work was ever done. Such notices are not worthy of the slightest consideration and are in no way "clouds upon the title," as is often claimed. Unless the construction work is begun and continued with reasonable diligence to completion, as provided in the statute, no right accrues. The use of the water alone fixes the right.

In regard to the statements required by the three subdivisions of Section 1415, practically any notice, regardless of form, giving the number of inches claimed, the purposes, place of use, means of diversion and size of conduit, will suffice. In the records are found

examples of empty generalities as well as some of refined details. As an illustration of how little need be stated, to be accepted as sufficient by the Supreme Court, the following notice from the case of De Wolfskill v. Smith (5 Cal. App. 175) is quoted.

Notice of Appropriation of Water. Take notice that the undersigned claims fifteen hundred inches of water measured under a four-inch pressure flowing from and at the wells bored by the San Jacinto Oil Company on the land which would be the northwest quarter of section four, township three south, range two west, San Bernardino meridian, if said land were surveyed by the United States, and I intend to divert said water at the three several points where this notice is posted, to wit, at each of said wells bored by the San Jacinto Oil Company.

I intend to use said water for domestic and irrigation purposes on the land which was known as the Rancho San Jacinto Nuevo and the Morena, Lakeview and Alesandro Colonies and adjoining lands in the county of Riverside, State of California.

I intend to divert said water by means of ditches of sufficient capacity to carry same, leading from each of said points.

Dated the thirteenth day of October, 1902.

ELENA P. DE WOLFSKILL.

Witness: DAVID G. DE WOLFSKILL.

CHAPTER II.

RIPARIAN RIGHTS IN THE WESTERN STATES

According to the common law doctrine of riparian rights in the law of waters, each owner along a stream was entitled to have the waters thereof flow in the natural channel, unpolluted in quality and undiminished in quantity. A strict interpretation of the doctrine would therefore forbid any use of the waters of the stream whatsoever. It was early modified in England so that two uses are recognized—ordinary or natural, including the use for domestic and stock purposes, and extraordinary or artificial, including the use for irrigation along the banks and also for mechanical purposes. For "ordinary" uses the upper riparian owner is allowed to take the entire stream if necessary; but for "extraordinary" uses he is entitled to water only when such use will not interfere with a like use by other riparian owners—that is, he must share the stream with others along its banks.

As shown in the previous chapter, a different doctrine—that of appropriation—grew up during the early occupancy by the miners of the public domain in the Western States. It was also shown that the early California cases establishing the new doctrine were between parties not holding title to any land along the streams; and that the Supreme Court of Nevada in Van Sickle v. Haines (7 Nev. 249) and the Federal Circuit Court for Nevada in Union Mill & Mining Co. v. Ferris (2 Saw. 176) in 1872 held that in cases where title to riparian land had passed from the Government, the new doctrine must give way to the older and long recognized (in England and the Eastern States) doctrine of riparian rights.

The basis of the argument for the rule laid down in the two Nevada cases was a statutory provision making the common law of England the rule of decision in all the Nevada courts. It is important to note the following words of Chief Justice Lewis (in Van Sickle v. Haines) regarding the two doctrines, as they show an erroneous view of the doctrine of appropriation which, unfortunately, has been shared by the courts in many Western States:

"It (the common law) is a rule which gives the greatest right to the greatest number, authorizing each to make a reasonable use of it, providing he does no injury to the others equally entitled to it with himself; whilst the rule of prior appropriation here advocated would authorize the first person who might choose to make use of or divert a stream, to use or even waste the whole to the utter ruin of others who might wish it."

In marked contrast to the attitude of the Nevada courts in the early cases is that of the Colorado courts. In Coffin v. Left Hand Ditch Co., 6 Colo. 443, decided in 1882, the issue between riparian owners and appropriators was before the court for the first time. Coffin and others were riparian owners along the St. Vrain River, who, in the dry season of 1879, interfered with the ditch of the Ditch Company, which diverted the St. Vrain waters to another watershed. The company being a prior appropriator, Coffin relied upon his riparian right. The opinion is full of strong expressions showing the need of appropriation in an arid section, but a few concluding sentences only are given here:

"We conclude, then, that the common-law doctrine giving the riparian owner a right to the flow of water in its natural channel upon and over his lands, even though he makes no beneficial use thereof, is inapplicable to Colorado. Imperative necessity, unknown to the countries which gave it birth, compels the recognition of another doctrine in confiict therewith. And we hold that, in the absence of express statutes to the contrary, the first appropriator of water from a natural stream for a beneficial purpose has, with the qualifications contained in the constitution, a prior right thereto to the extent of such appropriation."

In the late seventies the case of Jones v. Adams, (19 Nev. 78), arose out of conflict over the waters of Sierra Creek, which, like Daggett Creek of the Van

Sickle case, is a small Sierra Creek on the west side of Carson Valley in Nevada. It was decided by the Supreme Court of Nevada in 1885 and the Van Sickle case was overruled on the ground that the doctrines of the common law were inapplicable "to the wants and necessities of the people, whether engaged in mining, agricultural or other pursuits." The doctrine of riparian rights was thus excluded from the law of waters in Nevada and has so remained.

The year following the decision in Jones v. Adams, the Supreme Court of California decided the celebrated case of Lux v. Haggin (69 Cal. 255). The extreme length of the opinion (two hundred pages—probably the longest in the California reports) is sufficient evidence of its importance and the interest in the issue involved. Lux and others sought to stop Haggin from diverting the waters of Kern River which would naturally flow down Buena Vista Slough, to which their lands were riparian. As in the Van Sickle case, the court had a wrong impression of appropriation and stated " . . . It does not require a prophetic vision to anticipate that the adoption of the rule, so called, of 'appropriation' would result in a monopoly of all the waters of the state by comparatively few individuals. . . ."

The riparian doctrine as modified in Lux v. Haggin is commonly called the California rule. Its principles, so often quoted, are best given in the words of the court:

"By the common law the right of the riparian proprietor to the flow of the stream is inseparably annexed to the soil, anl passes with it, not as an easement or appurtenance, but as part and parcel of it. Use does not create the right, and disuse cannot destroy or suspend it. The right in each extends to the natural and usual flow of all the water, unless where the quantity has been diminished as a consequence of the reasonable application of it by other riparian owners for purposes hereafter to be mentioned.

"By our law the riparian proprietors are entitled to a reasonable use of the waters of the stream for the purpose of irrigation. What is such reasonable use is a question of fact, and

depends upon the circumstances appearing in each particular case. . . . "

Lux v. Haggin was decided by a divided court of four to three. It has not only fastened the rule of riparian rights upon California, seemingly for all time, but has been the main reliance of the other western states following the California rule. The following extract from the dissenting opinion of Justice Ross shows how decided was the difference of opinion among the Justices:

"The common-law doctrine of riparian rights being wholly inconsistent with and antagonistic to that of appropriation, it necessarily follows that when the federal and state governments assented to, recognized, and confirmed, with respect to the waters upon the public lands, the doctrine of appropriation, they in effect declared that that of riparian rights did not apply. The doctrine of appropriation thus established was not a temporary thing, to exist only until some one should obtain a certificate or patent for forty acres or some other subdivision of the public land bordering on the river or other stream of water. It was, as has been said, born of the necessities of the country and its people, was the growth of years, permanent in its character, and fixed the *status* of water rights with respect to public lands."

The California rule has been adopted in California, Kansas, Montana, Nebraska, North Dakota, Oklahoma, Oregon, South Dakota, Texas and Washington. Parts of each of the states named are so humid that irrigation is not only not necessary, but there is a demand for drainage. In the remainder of the irrigation states—Arizona, Colorado, Idaho, Nevada, New Mexico, Utah and Wyoming—the doctrine of riparian rights has been abrogated and the so-called Colorado rule followed; that is, the doctrine of appropriation exclusively. It may assist one to remember the above classification by noting that the semi-arid or "border" states (that is, bordering the irrigation zone) follow the Caliornia rule, and that the strictly arid or "interior" states (that is, well within the irrigation zone) follow the Colorado rule.

One often hears the remark that there is no real conflict between the doctrines in California to-day, and

it many times comes from a supposedly reliable source. Even the Supreme Court of Nevada in a recent case, Twaddle v. Winters (29 Nev. 88) decided in 1906, in speaking of the passing of the doctrine of riparian rights, quoted with approval the testimony of a California Congressman in the case of Kansas v. Colorado, in which he said "that there had been a departure from the principles laid down in Lux v. Haggin, because at that time the value of water was not realized; that the decision had been practically reversed by the same court on subsequent occasions, and that the doctrine of prior appropriation and the application of water to a beneficial use is in effect in force now in that state."

The above statement is entirely misleading, as the California Supreme Court has not only not departed from its position in Lux v. Haggin, but has within the past few years handed down opinions which almost nullify the doctrine of appropriation under certain physical conditions.

While the Nevada Supreme Court was writing its opinion in Twaddle v. Winters, the case of Miller & Lux v. Madera Canal Co., (155 Cal. 59) was before the California Supreme Court. It was finally decided in January, 1909. Miller & Lux as riparian owner along the lower Fresno River sought to enjoin the Madera Canal Company from diverting the flood waters thereof for storage in reservoirs. The Fresno River drains only the lower mountain area and is therefore dry early in the summer. The canal company is the owner of a system of ditches for the lands in the vicinity of Madera and intended to make use of certain natural depressions as reservoirs so that the flood waters of May and early June might be stored for use later in the season. The river banks through the Miller & Lux property are so low that the floods annually overflow them and deposit "on such lands large quantities of fertilizing and enriching materials, increasing their productiveness and enhancing their value."

The canal company argued that it intended to divert and store only the flood waters which could

not be considered part of the natural flow to which riparian owners were entitled, and that the use, if such it could be called, of the flood waters by Miller & Lux was too wasteful and unreasonable to be tolerated. The Court refused to accept this argument in the following language:

"What the riparian proprietor is entitled to as against non-riparian takers is the ordinary and usual flow of the stream. There is no good reason for saying that the greatly increased flow following the annually recurring fall of rain and melting of snow in the region about the head of the stream is any less usual or ordinary than the much diminished flow which comes after the rains and the melted snows have run off."

"The doctrine that a riparian owner is limited to a reasonable use of the water applies only as between different riparian proprietors. As against an appropriator who seeks to divert water to non-riparian lands, the riparian owner is entitled to restrain any diversion which will deprive him of the customary flow of water which is or may be beneficial to his land. He is not limited by any measure of reasonableness."

A case even more bewildering to appropriators, if possible, was that of Miller v. Bay Cities Water Company, decided one year later—February, 1910. Miller was the owner of a small orchard in the Santa Clara Valley and had for years irrigated it by pumping from a well. The water company intended to construct a dam to bed rock across the "lower gorge" of the Coyote River and thus impound the flood waters of the stream for diversion to San Francisco or other bay cities. Below the lower gorge the river flows through Santa Clara Valley to San Francisco Bay, so that no lower storage is possible. Miller claimed that the dam would prevent the underground waters from reaching the water bearing stratum tapped by his well and sought an injunction.

The Supreme Court sustained the finding of the lower court that the water bearing stratum below Miller's land has its "intake" in the vast bed of gravel in the lower gorge and is supplied by the surface and subsurface waters of the Coyote River flowing through

said gorge. It accordingly affirmed the decree perpetually enjoining the water company "from arresting or obstructing at or above the lower gorge (except for the reasonable use thereof on the lands of said corporation in the exercise of its riparian rights) any of the water of the Coyote River which, excepting for said arresting or diverting, would flow on the surface of the bed of said river through said gorge, or would flow or percolate through said gorge underneath the surface thereof."

In a later chapter it will be shown that the owners of land overlying a water bearing stratum are treated in California as riparian owners, so the Supreme Court held that the water company was properly restrained from diverting to non-riparian lands the water which would flow through the stratum tapped by Miller's well. The water company insisted "that if the plaintiff has a right to enjoin the diversion of the waters of the stream which would otherwise percolate to and supply the artesian stratum underlying his land, the court was not warranted in enjoining the appellants from diverting the flood waters of the Coyote River, which it was claimed were wasted and lost in the bay of San Francisco."

Regarding this argument the Supreme Court said:

"All these waters are necessary, of themselves or by their force, to supply underground waters, which they, even now, fail to do to the full capacity of the underlying strata, to which full capacity the plaintiff and others interested in them are entitled. . . . We are not prepared to say that, even in their flow after passing the gravels in which the intake to these artesian strata lie, they serve no other useful purpose, but certainly these storm waters do not become waste until they have flowed over these gravel beds and are on their way to the bay. It is only there that it may be said that they can perform no further useful service, the only place where they first become waste waters, and where, without apparently invading the rights of anyone they may be diverted. No reasonable objection could be made to the diversion of the waters there because they are then, for all practical purposes, waste waters."

The above ruling seems to establish so wasteful a policy that Justice Shaw wrote a concurring opinion

and clearly presented the dire need of storage of our flood waters, showing the accomplishment of the triple purpose of lessening damage by overflow, affording irrigation water during the dry season and, through return waters from increased irrigation, bettering navigation during the low water period. He held, however, that the conditions in the Santa Clara Valley are not paralleled elsewhere in the State, except it may be in the San Fernando valley, and call for the rule laid down; that the floods when waste occurs are infrequent and such waste small and practically indeterminable; that the storage at chance intervals of such small quantities, subject to heavy evaporation losses, would be of little value; and that granting permission to store such waste while conferring no substantial benefit upon the water company would lessen the value of the valley property overlying the water bearing stratum.

The two cases above discussed are of particular interest as the era of reservoir building in the states recognizing the riparian doctrine is just beginning. The point to be remembered is that each case deals with such conditions that the court believes actual damage would be done if storage was allowed. This is emphasized in the recent case of Miller & Lux v. Fresno Flume Co. (158 Cal. 626), decided November 22, 1910, wherein the plaintiff sought to have enjoined the maintenance of defendant's dam and its alleged interference with the natural flow of Stevenson Creek, a tributary of the San Joaquin River.

Plaintiffs quote many California cases "as establishing the proposition that the riparian owner is entitled to the unobstructed flow of a stream at all times, including flood waters . . . . . and that, without regard to damage, it is the right of every riparian proprietor to have the water come to his land through its natural channel, undiminished in quantity and unimpaired in quality, save to the extent that results from reasonable use of the water by other riparian owners upon the stream."

In answer to this argument the court says:

"But the cases do not support the position which appellants take. Even if at common law or under the civil law it was a part of the usufructuary right of the riparian owner to have the water flow by for no purpose other than to afford him pleasure in its prospect, such is not the rule of decision in this state. . . .

It will be found, therefore, that the decisions of this state not only do not deny the right to the use of storm and flood waters, but encourage the impounding and distribution of those waters wherever it may be done without substantial damage to the existing rights of owners."

The court continues:

"In Miller v. Bay Cities Water Co., 157 Cal. 256 (107 Pac. 115), the principle is clearly recognized and declared that an appropriator of water may divert for use to any point beyond the watershed any portion of the waters of the stream which serves no useful purpose either to the riparian owners, or in supplying the underground stratum, or such waters as are in excess of the quantity necessary for such purposes";

And later in quoting from Miller & Lux v. Madera Canal Company, states,

"That our cases 'decide that an injunction restraining the diversion of storm or flood waters will not be granted at the instance of a riparian owner, when it appears that he will not be injured in any way by such diversion.'"

It is finally concluded that if the doctrine laid down in the earlier cases confers such rights upon riparian owners as claimed by plaintiffs, then such earlier cases may be considered modified by the later decisions. It is shown in the closing part of this opinion that both parties are really riparian owners so that the relative rights of appropriators and riparian owners did not actually arise in the case. The language used has therefore the force of a dictum only, but as it was accepted by an undivided court it will undoubtedly hold in such cases.

The conclusion that must be drawn from the above is that lower riparian owners may not only enjoin the diversion of the natural flow but may also enjoin the storage of even the flood waters if such storage will result in damage, either present or prospective. It is therefore of vital interest to know the limits of

riparian lands and the general limitations which other states have placed upon the riparian doctrine.

The modified rule of riparian rights has been followed by California, Kansas, Montana, Nebraska, North Dakota, Oklahoma, Oregon, South Dakota, Texas and Washington; and has been rejected by Arizona, Colorado, Idaho, Nevada, New Mexico, Utah and Wyoming. Its rejection by the above States was not due to constitutional or statutory provisions but to the fact that the doctrine was entirely unsuited to the physical conditions existing in an arid region, as shown by the quotations from Jones v. Adams and Coffin v. Left Hand Ditch Co., given in the previous article. Similar language was used by the courts of the other arid States abrogating the doctrine.

The only Supreme Court holding that the doctrine has been modified by statute is that of Nebraska. In Crawford v. Hathaway (67 Neb. 325) decided February 4, 1903, it is held:

> The irrigation act of 1889 abrogated in this State the common law rule of riparian ownership in water, and substituted in lieu thereof the doctrine of prior appropriation. This legislation could not and did not have the effect of abolishing riparian rights which had already accrued, but only of preventing the acquisition of such rights in the future.

The Nebraska irrigation act of March 19, 1889, above referred to, was similar to the California statute of 1872 providing for the appropriation of water. This statute was considered at length in Lux v. Haggin—the latter party contending "that the Civil Code gives * * * a right to the water superior to that of the riparian proprietor below." Section 1422 of the Civil Code then contained the following words: "The rights of riparian proprietors are not affected by the provisions of this title." The court held that:

> Section 1422 of the Civil Code is protective, not only of riparian rights existing when the Code was adopted, but also of the riparian rights of those who acquired a title to land from the State, after the adoption of the Code and before an appropriation of water in accordance with the Code provisions.

Neither a grantee of the United States nor the grantee of a private person, who was a riparian owner when the Code was adopted, need rely for protection on Section 1422. Such persons are protected by constitutional principles.

At the first legislative session (1887) after the decision of Lux v. Haggin, section 1422 was repealed with the proviso "that the repeal of this section shall not in any way interfere with any right already vested." This repeal opened the way for a new attack upon the riparian doctrine but no serious attempt has been made. If the California Supreme Court could be induced to accept the ruling of the Nebraska Supreme Court in Crawford v. Hathaway, the riparian right would be considered abrogated for all public land not entered in 1887.

The Congressional Desert Land Act of March 3, 1877, contains the following language in one of its provisos:

And all surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining, and manufacturing purposes subject to existing rights * * *

This language was construed by the Supreme Court of Oregon in the recent case of Hough v. Porter (51 Ore. 318) decided January 5, 1909, as follows:

Construed, then, with the act of 1866 and other provisions of the act of 1877, we are of the opinion that all lands settled upon after the date of the latter act were accepted with the implied understanding that (except as to water for domestic purposes) the first to appropriate and use the water for the purpose specified in the act should have the superior right thereto.

Hough v. Porter was referred to by the United State Supreme Court in Boquillas Cattle Company v. Curtis (213 U. S. 339) decided April 19, 1909. The case involved a conflict between a riparian owner and an appropriator and the Court after stating that the riparian doctrine was not applicable in Arizona, continued:

The opinion that we have expressed makes it unnecessary to decide whether land in the arid regions patented after the

act of March 3, 1877 * * * are not accepted subject to the rule that priority of appropriation gives priority of right by virtue of that act construed with Rev. Stat. 2339. The Supreme Court of Oregon has rendered a decision to that effect on plausible grounds.

The Supreme Court of Washington, however, has refused to consider the Hough v. Porter rule sufficiently "plausible" to follow. In Still v. Palouse Irrigation & Power Co. (117 Pac. 466) decided August 19, 1911, the Court had before it a case somewhat similar to Miller & Lux v. Madera Canal Co., except that the defendant company attempting storage was also a riparian owner. The company contended for the rule laid down in Hough v. Porter, but the court held that "the act itself manifestly relates only to the reclamation of desert lands" and refused to apply the rule as the lands involved had not been entered under the Desert Land Act. As noted above the Oregon Supreme Court held that the rule applied to all public land, which should be the construction if the decision were rendered on "plausible grounds." The Supreme Courts of California, Montana, North Dakota and South Dakota (the remaining riparian right States to which the Desert Land Act applies) have not as yet been asked to accept the rule of Hough v. Porter and their position is therefore still doubtful.

Lateral Limits.

It has been shown previously that an appropriator can neither divert nor store flood waters when such might result in damage, present or prospective, to a riparian owner. Any large project, to protect itself, must therefore purchase the riparian land or the riparian right annexed thereto—it being well settled that the riparian right may be sold apart from the land.

The generally accepted lateral limit of riparian land is the margin of the water shed. The Supreme Court of Oregon, however, in Jones v. Conn (39 Ore. 30) has held that riparian lands are not so limited but extend to the exterior boundaries regardless of the watershed.

It is the only State wherein a riparian owner, under the claim of riparian right, may divert the water of a stream beyond its watershed. The general rule is based on the idea that only those lands which border on and drain into a stream can be considered riparian thereto.

In two cases the California Supreme Court has materially restricted the lateral limits as shown by the following quotations.

In the case at bar the stipulation is that these fourteen quarter sections were granted each by a separate patent, each patent being based upon a separate entry, and these fourteen quarter sections therefore constitute fourteen distinct tracts of land, and mere contiguity cannot extend a riparian right which is appurtenant to one quarter section to another, though both are now owned by the same person. *Boehmer v. Big Rock Irr. Dist.* 117 Cal. 27.

If the owner of a tract abutting on a stream conveys to another a part of the land not contiguous to the stream, he thereby cuts off the part so conveyed from all participation in the use of the stream and from riparian rights therein, unless the conveyance declares the contrary. Land thus conveyed and severed from the stream can never regain the riparian right, although it may thereafter be reconveyed to the person who owns the part abutting on the stream, so that the two tracts are again held in one ownership. *Anaheim Union Water Co. v. Fuller,* 150 Cal. 331.

As later decisions have not modified the above rulings, they may be considered accepted in California. The Nebraska Supreme Court in Crawford v. Hathaway considered this question at great length and concluded:

A riparian owner's right to the reasonable use of water exists solely by virtue of his ownership of the lands over or by which the stream flows. It is obvious that his right cannot be enlarged or extended by acquisition of title to lands contiguous to the riparian land; nor can a riparian owner, as such, rightfully divert to non-riparian lands water which he has a right to use on riparian land, but which he does not so use * * * It being the policy of the government to dispose of its public domain in tracts of not less than 40 acres each, why, then, may it not be said that riparian rights are limited to such tracts, even though several of them may be joined together in one

certificate of purchase or instrument of conveyance? It is not decided that such should be the rule in this State, as it is deemed preferable to leave the question open for maturer investigation and consideration.

The Supreme Court of Texas in Watkins Land Co. v. Clements (86 S. W. 733) decided April 24, 1905, held that riparian rights "cannot extend beyond the original survey as granted by the government."

Were it not for the recent cases wherein lower riparian owners (on a showing of possible damage) have been allowed to stop the storage of flood waters by either riparian owners or appropriators, those interested only in power development might be strongly in favor of the riparian doctrine. Under it they can demand that the waters be allowed to flow to even the mouth of the stream if a power site there exists. The lower sites, however, are exceptional, and as present day developments necessitate storage, prospective power plants are as materially affected by the flood water decisions as irrigation projects. If the riparian doctrine must continue in force in so many western States, some relief can be secured by inducing the courts to further restrict the lateral limits. A general acceptance of the suggestion of the Nebraska Supreme Court that riparian rights be limited to forty acre tracts would lessen the difficulties in the way of the newer and larger projects.

The forty acre suggestion applies, of course, to public lands only. In California there are a great number of large Spanish grants, each of which must be considered a single parcel, and to such the suggestion would not apply. As those grants often extend from watershed to watershed, they contain large areas riparian to streams crossing them. While such a grant remains in a single ownership, the proprietor thereof, under the decisions cited, practically controls the streams as far as appropriators are concerned.

In the quotation from Anaheim Union Water Company v. Fuller, above, it is stated that in a partition of a riparian tract the part distant from the

stream loses its riparian right "unless the conveyance declares the contrary." A number of Spanish grants crossed by streams are now being subdivided, and the deeds are so drawn that the various parcels share in the riparian right, regardless of proximity to the stream. It is well settled that the parcels so conveyed retain the riparian right among themselves, but the western courts have not yet directly passed upon the question as to whether the owner of such a parcel not touching the stream can be considered to possess a riparian right as against an appropriator or riparian owner outside the original grant. Mr. Wiel, in the third edition of his splendid work on "Water Rights in the Western States," raises this question and after an exhaustive study of the cases bearing on the point, concludes that such parcels not bordering upon the stream cannot be considered riparian when in conflict with rights outside of the grant. The conclusion is certainly based on sound reasoning and conforms to the basic idea that only lands bordering upon a stream are riparian thereto. This question will undoubtedly be raised in the near future and the hope of all appropriators is that the courts will accept Mr. Wiel's conclusion.

In those instances where the land along the stream below a reservoir site was secured under the public land laws, the maximum limits of riparian lands (in California, Nebraska and Texas—the public lands in the last being State lands only) may be determined by an examination of the land office records, as only those forties which touch the stream or were included with such forties in the original patent can be considered riparian. Where the stream passes through lands which were part of a Spanish grant in California, abstracts of title must be examined in order to ascertain the least parcel touching the stream at one time in a single ownership. In the riparian States, other than California, Nebraska and Texas, the ordinary assessor's map showing ownership along the streams will give the riparian lands—they being those

tracts in single ownership not extending beyond the watershed. The last statement must be modified for Oregon, as there the riparian land is not limited to the watershed.

Riparian Right Restricted to Riparian Land.

On account of the riparian right being so superior (in the riparian right States) to that of appropriation, there is a popular idea that a riparian proprietor actually owns the water and is not limited to its use on his riparian land. The courts, however, have consistently held to the contrary, as illustrated by the second quotation from Crawford v. Hathaway above. Of the many cases thus holding, one presenting unusual conditions is Duckworth v. Watsonville Water & Light Company, (150 Cal. 520).

The Watsonville Company, in order to protect its diversion of the waters of Pinto Lake to Watsonville, had purchased either the riparian land or the riparian right for all the lands bordering on the lake. Duckworth leased a parcel of such riparian land, posted a notice of appropriation, initiated his diversion work and brought an action to have his water right determined as against the company. The company claimed that by the purchase of the riparian lands and the riparian rights, including those annexed to the parcel occupied by Duckworth, it was entitled to all of the waters of the lake. The following extract from the opinion. clearly presents the court's view:

> We have said that the water company is entitled to a judgment protecting its riparian right, although it has not used, and does not immediately propose to use, the water on its riparian land. This rule does not apply to any right which it has acquired by appropriation or use upon other lands, and this appears to be the source of the right which it has been exercising. Such right depends upon use and ceases with disuse. (Civ. Code, 1411). It extends only to the water actually taken and used. The consequence is that, so far as the protection of this right and the water necessary to supply this use are concerned, the water company is not entitled to prevent an appropriation or use by others of the surplus of waters of the lake, if there is any.

Attention has been called to language used by the Nevada Supreme Court in Van Sickle v. Haines, and by the California Supreme Court in Lux v. Haggin, which characterized the doctrine of appropriation as one certain to result in monopoly. The passage quoted immediately above tells another story.

Summary of Principles.

The riparian doctrine has been abrogated in the seven strictly arid States and has been adopted in the ten semi-humid States of the irrigation zone. Of the ten, it has been held in Nebraska that the State water appropriation act annulled the riparian rights for public lands then unentered, and in Oregon that the congressional desert land act did likewise.

The doctrine restricts the right to riparian lands and allows a reasonable use of water to all riparian owners, the measure of which will depend upon the conditions of the particular case. The right is not created by use and does not cease with disuse. As between a riparian owner and an appropriator, the former is not limited by any measure of reasonableness, and may restrain any diversion or interference with the flow (including flood waters) by the latter which may result in damage to his riparian land.

Except in Oregon, riparian lands are limited to the watershed. In California, Nebraska and Texas the right is further limited to the original tract granted by the government, and in California still further limited to the smallest tract at one time in a single ownership.

It is not improbable that the lateral limits may be ultimately limited in some States to the forty acre tract crossed by the stream, and that other States may follow Nebraska and Oregon in their construction of state and federal statutes. It is certain, however, that statutes annulling riparian rights existing prior to their passage are clearly unconstitutional. All such changes in the doctrine must be made by the courts and not the legislatures.

CHAPTER III.

THE LAW OF UNDERGROUND WATERS.

According to the Thirteenth Census the source of water supply for 433,630 acres of the total of 13,739,500 acres irrigated in 1909 in the Western States was wells. Of this area 332,410 acres were irrigated from wells in California, for which the total was 2,664,100 acres. Although the area so irrigated is but a small percentage of the total, it is constantly increasing. The surface supply is being rapidly exhausted and future development in certain sections must rest entirely upon the underground supply. This fact is so well recognized in California that the larger power companies have initiated a campaign of education to interest farmers in the use of electric power for pumping. They have installed a working exhibit on the University of California demonstration train and keep an expert in attendance to explain the operation of motors and pumps. The gas engine and pump manufacturers are equally interested and through their catalogues are making an effective argument for the introduction of pumping plants for irrigation.

There are two classes of natural underground waters—percolating waters and those that flow in a defined subterranean channel. Percolating waters have been well designated "vagrant, wandering drops moving by gravity in any and every direction along the line of least resistance."

Illustrations of underground waters moving in a defined channel are very familiar, and the so-called

"sub-flow" of streams is especially common. In the previous chapter the recent case of Miller v. Bay Cities Water Company was considered at some length. Although the court therein discusses the California cases on percolating waters, Miller's source of supply was clearly a "subterranean channel," and his right the same as that of a riparian owner on a surface stream. Waters in subterranean channels have always been considered subject to the same legal principles as the waters of surface streams. In most jurisdictions underground waters are presumed to be percolating and the burden of proving the existence of a known and defined channel is on the one so asserting.

The common law rule is that percolating waters belong to the owner of the surface and such rule is generally accepted except as later stated in this chapter. An early California case—Hanson v. McCue (42 Cal. 303)— adopts the rule in the following language.

> Water filtrating or percolating in the soil belongs to the owner of the freehold—like rocks and minerals found there. It exists there free from the usufructory right of others, which is to be respected by the owner of an estate through which a defined stream of water is found to flow. The owner may appropriate the percolation and filtrations as he may choose, and turn them to profit if he can.

It must be appreciated that the task of showing the difference between the two classes of underground waters in a given case is very difficult. It means the introduction of much expert testimony with the usual conflict in scientific views. An excellent illustration is the pioneer case of Los Angeles v. Pomeroy (124 Cal. 597) wherein the city sought to condemn land in the San Fernando Valley for use in connection with its water supply system from the Los Angeles River. The city contended that the waters under the surface of the tract in question composed the subterranean flow of the Los Angeles River and therefore belonged to it under its "pueblo right"—a right under the Mexican law giving the pueblo paramount interest in the waters of streams. Pomeroy claimed that such

waters were but percolating waters and therefore belonged to him as owner of the soil. Very elaborate models and relief maps were introduced in connection with the expert testimony on each side and the court finally decided that the evidence showed the existence of a well defined channel and that the underground waters were therefore part of the flow of the Los Angeles River and not percolating waters.

California is the only Western State which has thus far departed from the common law rule of percolating waters. In the now celebrated case of Katz v. Walkinshaw (141 Cal. 116) the plaintiffs sought "to enjoin defendant from drawing off and diverting water from an artesian belt, which is in part on or under the premises of plaintiffs, and to the water of which they have sunk wells" for water for domestic purposes and for irrigating their lands overlying the artesian water. The defendant diverted "the water for sale, to be used on lands of others distant from the saturated belt." The plaintiffs contended that the subsurface water constituted an underground stream and that they were riparian thereto. The defendant on the contrary alleged that the water rising in her wells was percolating water and therefore her property. The original opinion of the Supreme Court in the case, written by Mr. Justice Temple, was handed down November 7, 1902. The court therein held that the artesian body was percolating water and not an underground water course to which riparian rights could attach. Instead of holding, as the lower court had done, that the defendant could not be enjoined, the Supreme Court after citing the authorities and dwelling on the difference in conditions "in a country like Southern California, where the relative importance of percolating water and water flowing in definite water courses is greatly changed," concluded that a different rule was required and established the new rule of reasonable use.

A rehearing was granted in order that additional arguments might be presented by those "not parties to

the action, but vitally interested in the principle involved," and the final opinion, written by Mr. Justice Shaw, was handed down on November 28, 1903. The opinion is very important on account of its treatment of the common law, in addition to the modification of the law of percolating waters, as shown by the following extract:

> The idea that the doctrine contended for by the defendant is a part of the common law adopted by our statute, and beyond the power of the court to change or modify, is founded upon the misconception of the extent to which the common law is adopted by such statutory provisions, and a failure to observe some of the rules and principles of the common law itself. In Crandall v. Woods, 8 Cal. 143, the court approved the following rule, quoting from the dissenting opinion of Bronson, J., in Starr v. Child, 20 Wend. 149: "I think no doctrine better settled than that such portions of the law of England as are not adapted to our condition form no part of the law of this State. This exception includes not only such laws as are inconsistent with the spirit of our institutions, but such as are framed with special reference to the physical condition of a country differing widely from our own. It is contrary to the spirit of the common law itself to apply a rule founded on a particular reason to a case where that reason utterly fails."

(It is a noteworthy point that the language of Mr. Justice Bronson quoted by Mr. Justice Shaw, was also quoted by Mr. Justice Ross in his dissenting opinion in Lux v. Haggin, wherein he argued that the common law rule of riparian rights, being unsuited to the existing conditions, should be rejected in California.)

After other forcible statements in regard to the adaptability and power of modification of the common law, the opinion describes at considerable length the semi-arid conditions existing in a large part of California ("in almost all of the southern half of it"), the insufficiency of the natural streams as sources of irrigation supply, and the absolute need of the utilization of the underground waters. Following the statement that "The claim that the doctrine stated by Mr. Justice Temple is contrary to all the decisions of this court is not sustained by an examination of the cases,"

it proceeds to analyze the former California cases supposedly upholding the common law rule of percolating waters, beginning with Hanson v. McCue, and concludes:

In view of this conflicting and uncertain condition of the authorities it cannot be successfully claimed that the doctrine of absolute ownership is well established in this State. It is proper to state that in all the opinions which have so readily quoted and approved the supposed common-law rule, that injuries from interference with percolating waters were too obscure in origin and cause, too trifling in extent, and relatively of too little importance, as compared to mining industries and the wants of large cities, to justify or require the recognition by the courts of any correlative rights in such waters, or the redress of such injuries, there has been no notice at all taken of the conditions existing here, so radically opposite to those prevailing where the doctrine arose. It is also to be observed that in some instances in the Eastern States, mentioned in the former opinion in this case, the injustice from the diversion of percolating waters has been so glaring and so extensive that the court there was compelled to depart from its previously decided cases and recognize the rights of adjoining owners.

The new rule established by the decision is well shown in the following paragraphs:

In controversies between an appropriator for use on distant land and those who own land overlying the water-bearing strata, there may be two classes of such land owners: those who have used the water on their land before the attempt to appropriate, and those who have not previously used it, but who claim the right afterward to do so. Under the decision in this case the rights of the first class of land owners are paramount to that of one who takes the water to distant land; but the land owner's right extends only to the quantity of water that is necessary for use on his land, and the appropriator may take the surplus. As to those land owners who begin the use after the appropriation, and who, in order to obtain the water, must restrict or restrain the diversion to distant lands or places, it is perhaps best not to state a positive rule until a case arises. Such rights are limited at most to the quantity necessary for use, and the disputes will not be so serious as those between rival appropriators.

Disputes between overlying land owners, concerning water for use on the land, to which they have an equal right, in cases where the supply is insufficient for all, are to be settled by giv-

ing to each a fair and just proportion. And here again we leave for future settlement the question as to the priority of rights between such owners who begin the use of the water at different times. The parties interested in the question are not before us.

Katz v. Walkinshaw has been consistently followed in all subsequent percolating water cases arising in California. As far as the establishment of further rules is concerned, the most important of the subsequent cases is Burr v. Maclay Rancho Water Company (154 Cal. 428) decided in 1908, as the question left undecided in Katz v. Walkinshaw was presented. The plaintiff therein "sued to enjoin the defendant company from pumping water from its wells on land adjoining that of plaintiff and transporting such water to distant lands for irrigation." The plaintiff's land consists of three tracts—blocks 153, 190 and 191 of the Maclay Rancho Ex-Mission San Fernando. The three tracts overly the body of percolating water. Plaintiff's wells are on block 191 which is an irrigated orchard. For a short time part of block 190 was also irrigated. The right is claimed for the irrigation of all of blocks 153 and 190 as well as the present irrigated block 191. Defendant's wells are on block 192 and while its pumps are being operated "it is impossible for the plaintiff to obtain any water from his wells by means of his pumps."

In the consideration of the case the Court comments on the contrast between the new doctrine of percolating waters and the rule of riparian rights in regard to true conservation as follows:

> It is not the policy of the law to permit any of the available waters of the country to remain unused, or to allow one having the natural advantage of a situation which gives him a legal right to water to prevent another from using it, while he himself does not desire to do so. The established and settled law of riparian rights in running streams, which have become vested rights, may compel a different rule with regard to such waters in some instances, but these rules of law do not, of necessity control rights in percolating waters.

Certain headnotes used in reporting the case so well set forth the principles established that they are quoted in full:

Different owners of separate tracts of land, situated over common strata of percolating water, may, each upon his own lands, take by means of wells and pumps from the common strata, such quantity of water as may be reasonably necessary for beneficial use upon his land, or his reasonable proportion of such water, if there is not enough for all; but one cannot, to the injury of the other, take such waters from the strata and conduct it to distant lands not situated over the same water-bearing strata.

As between an appropriator of percolating water for use on distant land, and an owner of land overlying the water-bearing strata, who was using the water on his land before the attempt to appropriate, the rights of the overlying landowner are paramount. Such rights, however, extend only to the quantity of water that is necessary for use on his land, and the appropriator may take the surplus.

After an appropriator of water from a common water-bearing strata has begun to take water therefrom to distant lands not situated over the strata, for use on such distant lands, the owner of other overlying land upon which he has never used the water, may invoke the aid of a court of equity to protect him in his right to thereafter use such water on his land, and thus prevent the appropriator from defeating his right, or acquiring a paramount right by adverse use, or by lapse of time. Such an appropriation for distant lands is subject to the reasonable use of the water on lands overlying the supply, particularly in the case of persons who have acquired the lands because of these natural advantages.

As against the owners of such overlying lands, either those who have used the water on their lands before the attempt to appropriate, or those who have not previously used it, but who claim the right afterwards to do so, the appropriator for use on distant land has the right to any surplus that may exist. If the adjoining overlying owner does not use the water, the appropriator may take all the regular supply to distant land until such landowner is prepared to use it and begins to do so.

In controversies between the owners of such overlying lands, and an appropriator of the water for use on distant lands, the court has the power to make reasonable regulations for the use of the water by the respective parties, fixing the times when each may take it and the quantity to be taken, provided they be adequate to protect the person having the paramount right in the substantial enjoyment of that right and to prevent its ultimate destruction. In the present case the judgment is directed to be modified in accordance with these rules.

Although the new rule of percolating waters is now so firmly established in California, no other Western State has thus far adopted it, although the tendency seems that way. The Supreme Court of Idaho in Le Quime v. Chambers (98 Pac. 415) dealing with the appropriation of spring waters commented on the establishment of the new rule in California, but, as it considered the law of underground waters not necessary to the case before it, did not follow it. The Supreme Court of New Mexico in Vanderwork v. Hewes (110 Pac. 567) treated the new rule in the same way as the Idaho court. The Supreme Court of Colorado in Smith Canal v. Colorado Ice Co. (98 Pac. 940) after referring to Katz v. Walkinshaw, stated:

> The law regulating ownership of percolating waters in the arid States is now of great—as time passes it will be still greater —importance; and, until a proper case is presented calling for it, we decline to announce the rule applicable to our local conditions.

As stated in McClintock v. Hudson (141 Cal. 275) the new rule regarding percolating water "makes it to a great extent immaterial whether the waters in this land were or were not a part of an underground stream" provided the withdrawal of such waters by defendant can be shown to substantially affect the source of supply—well or stream—of plaintiff. The need of distinguishing between the two classes of underground waters still exists in all the Western States except California, and in the latter the problem of proving the alleged damage to a source of supply remains and is generally a difficult one.

Contrast of the California Rules of Percolating Waters and of Riparian Rights.

The owner of land overlying a body of percolating water corresponds to a riparian owner on a surface stream, and an appropriator of percolating waters for use on distant lands (that is, not overlying) corresponds to an appropriator of surface waters for use on non-riparian lands. Under the rule of riparian rights the riparian owner may perpetually enjoin the

diversion or storage of the waters of a stream when such diversion is or may be of injury to him; and in the consideration of the question of probable damages the riparian owner cannot be restricted to a reasonable use. Under the new rule of percolating waters the times and amounts of use by overlying owner and appropriator may be fixed by the Court so that the overlying owner will have the first use of a reasonable amount for his overlying land and the appropriator the surplus for the distant land; and in cases of present non-use by the overlying owner, the appropriator will be allowed to withdraw the water until the former is ready to use it. In brief, the new rule of percolating waters allows the widest possible use of the source of supply, while the rule of riparian rights results in waste. It is rather paradoxical to have the sub-surface supply, which is naturally conserved in the underground reservoirs, regulated by a wise rule, while the surface supply, which unless artificially stored or reasonably used must run to waste, remains unregulated.

In the previous chapter it was stated that the case of Lux v. Haggin fixed the modified doctrine of riparian rights in California seemingly for all time. This was so written as the general view, even among those strenuously opposed to the doctrine, is that the Supreme Court of California could not seriously consider the abrogation of the doctrine on account of the extensive rights which have been recognized as vested by the long line of decisions following the lead of Lux v. Haggin. It is believed, however, that the riparian rights of consequence to single proprietors belong to the Spanish grants; that the most of these have been long irrigated and therefore fully protected under the doctrine of appropriation; and that those that remain are being or will be subdivided into small tracts, comparatively few of which will retain the riparian right, and which will therefore be better served by the doctrine of appropriation. There remain in addition to the grants the public land subdivisions immediately

touched or crossed by the streams, and which lie in such narrow strips that usually no feasible irrigation scheme can be made to include them without including non-riparian lands also—that is, without resting on the doctrine of appropriation. The abrogation of the riparian rule would therefore not materially injure single proprietors, the aggregate of whose holdings now seriously retards the promotion of storage works.

Lux v. Haggin fixed the rule of riparian rights for the reason that California had adopted the common law and that it was the doctrine of the common law. Katz v. Walkinshaw rejected the common law rule of percolating waters as unsuited to the conditions existing in California.

The court in Lux v. Haggin undoubtedly considered the riparian rule the best for the interests of the State, and looked upon the doctrine of appropriation as one certain to result in monopolies of the water supply. The present day view of this latter doctrine will be presented in the next chapter, and, it is believed, the "monopolistic" idea will be shown to be untenable.

CHAPTER IV.

THE DOCTRINE OF APPROPRIATION.

Most of the Western States have adopted statutes which place the control of water appropriations in the office of the State Engineer. In all but a few, such statutes were but recently adopted so that the great mass of water rights resting on the doctrine of appropriation must be defined by the principles laid down from time to time by the courts. In the first chapter it was stated that the California statutes (Sections 1410 to 1422 of the Civil Code) were but declaratory of existing law (established by the courts). Similar statutes were first adopted in the other Western States and the court rulings throughout differ but little.

Appropriations Not Restricted to Public Lands.

The statement is generally made by those advocating the riparian doctrine that appropriations (in riparian right States) can only be made on the public lands and this view is somewhat sanctioned by earlier California decisions. In Duckworth v. Watsonville (150 Cal. 520) the rule is positively stated as follows:

> The right to appropriate water under the provisions of the Civil Code is not confined to streams running over public lands of the United States. It exists wherever the appropriator can find water of a stream which has not been appropriated and in which no other person has or claims superior rights and interests.

The above does not mean that one may trespass upon private property and make a diversion. The right of way for the ditch or conduit must, of course, be secured from the owner of the riparian land.

In regard to appropriations and use on public lands not subject to entry it has been recently held by the Supreme Court of Washington in Avery v. Johnson (109 Pac. 1028) that no such right "can be acquired by one illegally occupying land in an Indian reservation, prior to the opening of the reservation to settlement under the homestead law."

Waters Open to Appropriation.

The statutes governing appropriations refer to the waters subject thereto as "running water flowing in a river or stream," "natural watercourses," "all waters," or use other expressions of the same nature, and a few enumerate in addition "lakes" and "springs." The courts treat the waters of a "natural watercourse" as being open to appropriation and a definition often quoted is the following, from Los Angeles, etc. v. Los Angeles (103 Cal. 466).

> There must be a stream, usually flowing in a particular direction, though it need not flow continually. It may sometimes be dry. It must flow in a definite channel,, having a bed or banks, and usually discharge itself into some other stream or body of water. It must be something more than a mere surface drainage over the entire face of the tract of land, occasioned by unusual freshets or other extraordinary causes. It does not include the water flowing in the hollows or ravines in land, which is mere surface water from rain or melting snow (i.e., snow lying and melting on the land), and is discharged through them from a higher to a lower level, but which at other times are destitute of water. Such hollows or ravines are not, in legal contemplation, watercourses.

The statement that all waters of natural watercourses may be appropriated must be qualified in the case of navigable streams. In Miller v. Enterprise Company (142 Cal. 178) the plaintiff sought to enjoin the defendant, a subsequent appropriator, from interfering with his dam and ditch, and the latter defended

its action on the ground that plaintiff's dam obstructed a navigable stream, the San Joaquin River. It was held that as the plaintiff had for many years appropriated water from the river, a navigable stream, without complaint from any public authority, state or national, and that while navigation had been interfered with, no person not connected with the government could complain. All cases between individuals raising the question of interference with navigation will undoubtedly be decided in the same way. It is well established, however, that the government may not only stop diversions from the navigable part of a stream but also even those from the non-navigable part, including tributaries, if such diversions will interfere with navigation. (United States v. Rio Grand D. & I. Co., 174 U. S. 690).

In actual work lake waters are often appropriated. It was contended in the Duckworth case (above) that such waters were not "running water flowing in a stream." but the court held:

> We think the better doctrine in respect to the character of a stream from which the statute provides for appropriations is that it is not necessary that the stream should continue to flow to the sea or to a junction with some other stream. It is sufficient if there is flowing stream; and the fact that it ends either in a swamp, in a sandy wash in which water disappears, or in a lake in which it is accumulated upon the surface of the ground, will not defeat the right to make the statutory appropriation therefrom, and we can see no reason why the appropriation in such a case may not be made from the lake in which the stream terminates, and which therefore constitutes a part of it, as well as from any other part of the water course.

In Hough v. Porter (98 Pac. 1083) the Oregon Supreme Court held, contrary to the above, in speaking of riparian rights, that when water spreads, as in a swamp or marsh, "with no well-defined current it cannot be deemed a water course." As the Oregon statutes now provide for the appropriation of "all waters" within the State, this ruling cannot affect appropriators.

It is well settled that water in artificial channels

or reservoirs cannot be appropriated and waters artificially developed as in a mining tunnel and allowed to flow in a natural water course to place of intended use are likewise exempt. It has been recently held by the Supreme Court of New Mexico in Vanderwork v. Hewes (110 Pac. 567), decided August 9, 1910, that "seepage water or waters from snows, rain, or springs, not traceable to and forming a stream or water course" may be used by the owner of the land on which they rise and are not subject to appropriation without his consent. The rule was followed by the Idaho Supreme Court in King v. Chamberlin (118 Pac. 1099) decided Nov. 3, 1911, where the waters in question were surface waters collected in a reservoir on plaintiff's land.

In the first chapter the notice of appropriation from De Wolfskill v. Smith (5 Cal. App. 175) was given. It was for the water flowing from abandoned oil wells on the public domain. The court held that as the water had gathered into a stream, it was immaterial "whether this stream is supplied by water percolating and filtering through the earth or not." The difference between this case and those cited in the last paragraph is that these waters, though artificially developed, had been abandoned, and the others had been retained in private possession.

Proceedings to Effect Appropriations.

An appropriation has been defined as "the intent to take, accompanied by some open, physical demonstration of the intent, and for some valuable use."

Since the adoption of the early statutes providing for the posting of notices at the point of intended diversion, the "intent" is expressed in the notice. Following the notice, the steps are the recording of the notice and the initiation of the construction work within the time designated—generally ten and sixty days respectively—the prosecution of construction to completion with reasonable diligence and the application to beneficial use. If the steps be followed, the water right dates from the posting of the notice.

The question of reasonable diligence is a serious

one and especially so as a very erroneous view is abroad in the land. A common idea is that all one need do "to hold the claim" is to act about as he would to hold a mining claim, and the result is that the occasional use of a shovel and wheelbarrow are supposed to satisfy the requirement. The error of this view was shown in a very early Nevada case, Ophir Mining Company v. Carpenter (4 Nev. 534) which is often quoted on this question by other courts. The following sentences are very much to the point and picture conditions typical of far too many of our so-called water claims:

> If the labor of twenty men for three or four months, in a period of two years and a half, constitutes diligence in the prosecution of such a vast enterprise as this, it is difficult, if not impossible, to designate the entire want of diligence. The manner in which this work was prosecuted certainly does not accord with what is generally understood to be reasonable diligence. Diligence is defined to be the "steady application to business of any kind, constant effort to accomplish any undertaking." The law does not require any unusual or extraordinary efforts, but only that which is usual, ordinary and reasonable. The diligence required in cases of this kind is that constancy or steadiness of purpose or labor which is usual with men engaged in like enterprises, and who desire a speedy accomplishment of their designs. Such assiduity in the prose cution of the enterprise as will manifest to the world a bona fide intention to complete it within a reasonable time. It is doing of an act, or series of acts, with all practical expedition, with no delay, except such as may be incident to the work itself. * * * * * * The weather would not have prevented work upon this ditch ordinarily more than three or four months in the year, hence labor upon it could probably have been prosecuted during eight or nine months out of every twelve. Here, however, there was a period of thirty months, when only about three months' work was done, or one month out of every ten. Rose during this time may have dreamed of his canal completed, seen it with his mind's eye yielding him a great revenue; he may have indulged the hope of providential interposition in his favor; but this cannot be called a diligent prosecution of his enterprise. Surely he could hardly have expected to complete it during his natural life by such efforts as were made through this period.

As the question of diligence is one of fact it will ordinarily, in case of litigation, be decided by a local jury. The jury may have a far less stringent view of "that constancy or steadiness of purpose or labor" than the ordinary engineer, but it will be obliged to decide on at least a fair degree of it. The size and character of the works, the natural conditions, including climate and material, and all other modifying elements, must be considered. Illness or lack of money are generally held to be no excuse for delay but the latter has been accepted as a valid excuse in Colorado and Idaho.

Incomplete Appropriations.

Prior to the completion of the diversion works and the readiness to apply the water to beneficial use the appropriation is incomplete. In Rincon Water & Power Company v. Anaheim Union Water Company (115 Fed. 543) Judge Welborn after quoting Sections 1415 to 1418 of the California Civil Code said:

> It is obvious that a person who intends to become an appropriator under these sections cannot acquire the exclusive right to the use of the water he intends appropriating, nor maintain any suit, either at law or in equity, for its diversion, until all the steps requisite to an appropriation have been taken. * * * From the statutory enactments and general principles above quoted and stated, the conclusion is not only fair, but unavoidable, that the only right which a person acquires by posting a notice is the right to prosecute without interference the works necessary to consumate his intended appropriation.

The question was before the California Supreme Court recently in two cases, resulting from the operations of Los Angeles in the Owens Valley—Inyo Consolidated Water Company v. Jess (119 Pac. 934) decided Dec. 11, 1911, and Merritt v. Los Angeles (120 Pac. 1064) decided Jan. 19, 1912. The plaintiff in each case had filed a notice of appropriation on a stream within a national forest and had made application to the Forest Service for permission to construct the conduit. No work had been done in either case as the Forest Service had not acted on the application, and Section 1422 of the Civil Code allows 60

days after the grant of permission from the federal authorities in which to begin construction. Each action was brought to obtain an adjudication of the alleged conflicting claims and the lower court, following the early decisions, decided that the plaintiff had no property interest on which to base the suit. The Supreme Court, however, decided that the plaintiff had "an incomplete, incipient, conditional right in the water, which is a vested interest in real property, and which may be adjudged to be such in an action to determine conflicting claims." In the later case the Supreme Court added:

> Such judgment, of course should not declare the plaintiff absolutely entitled to the water, nor enjoin the defendant from taking or using it during the intervening time prior to the completion of plaintiff's works to a stage which will enable him to divert and use it. It should only declare and describe the plaintiff's contingent right to use the water and enjoin adverse claims or uses injurious thereto.

The only effect of the two decisions, therefore, is to secure to the owner of an incomplete right a determination of conflicting claims. They do not allow interference with either construction of works or actual diversions.

The Measure of the Right.

Under a great many of the early decisions not only was the minimum capacity of the ditch decreed but very often the amount mentioned in the notice, which might be far in excess of the maximum capacity. The holders of these old rights very naturally looked upon the amount decreed as their water, whether they had use for it or not, and believed that they had the right to sell as desired. No court would tolerate such a view today. It is now generally held that a right to the use of water is limited in time and volume to the extent of the needs of the possessor thereof.

The rule is well illustrated by the following quotation from McCoy v. Huntley (119 Pac. 481) decided by the Supreme Court of Oregon Jan. 15, 1912.

> We see no reason why, even in cases involving prior and subsequent appropriations of water, the courts cannot require the

appropriators to alternate in the use of the water. The time when water may be used recklessly or carelessly has passed in this State. With increasing settlement water has become too scarce and too precious to justify any but an economical use of it. An appropriator has only the right to use so much as his needs require and at the time his needs require. And if these are satisfied by a use of the whole flow every other day, or every alternate week, he ought not to be heard to complain. It is evident that from some cause or from a variety of causes the waters of Pine creek are diminishing in volume at the point where the parties to this controversy are residing. It is now probable that to divide the water, without alternating, would injure both parties. A test, since the preliminary order was made in this case in 1906, indicates that by the method adopted both parties can raise good crops and both prosper.

Principles of Prior Appropriation.

Probably the best judicial summary of the principles of prior appropriation appearing in the reported cases is that of Judge Hawley in Union Mill & Mining Company v. Dangberg (81 Fed. 73) decided May 24, 1897. It was Judge Hawley who, when a Justice of the Nevada Supreme Court, wrote the opinion in Jones v. Adams overruling Van Sickle v. Haines and abrogating the doctrine of riparian rights in Nevada. His opinions in both the law of mines and the law of waters show a deep knowledge of the industries affected and an earnest desire to assist in bettering conditions. The reader will find the Dangberg case both interesting and instructive. The summary follows:

Under the principles of prior appropriation, the law is well settled that the right to water flowing in the public streams may be acquired by an actual appropriation of the water for a beneficial use; that, if it is used for irrigation, the appropriator is only entitled to the amount of water that is necessary to irrigate his land, by making a reasonable use of the water; that the object had in view at the time of the appropriation and diversion of the water is to be considered in connection with the extent and right of appropriation; that, if the capacity of the flume, ditch, canal, or other aqueduct, by means of which the water is conducted, is of greater capacity than is necessary to irrigate the lands of the appropriator, he will be restricted

to the quantity of water needed for the purposes of irrigation, for watering his stock, and for domestic use; that the same rule applies to an appropriation made for any other beneficial use or purpose; that no person can, by virtue of his appropriation, acquire a right to any more water than is necessary for the purpose of his appropriation; that, if the water is used for the purpose of irrigating lands owned by the appropriator, the right is not confined to the amount of water used at the time the appropriation is made; that the appropriator is entitled, not only to his needs and necessities, at that time, but to such other and further amount of water, within the capacity of his ditch, and further amount of water, within the capacity of his ditch, as would be required for the future improvement and extended cultivation of his lands, if the right is otherwise kept up; that the intention of the appropriator, his object and purpose in making the appropriation, his acts and conduct in regard thereto, the quantity and character of land owned by him, his necessities, ability, and surroundings, must be considered by the courts, in connection with the extent of his actual appropriation and use, in determining and defining his rights; that the mere act of commencing the construction of a ditch with the avowed intention of appropriating a given quantity of water from a stream gives no right to the water unless this purpose and intention are carried out by the reasonable, diligent, and effectual prosecution of the work to the final completion of the ditch, and diversion of the water to some beneficial use; that the rights acquired by the appropriator must be exercised with reference to the general condition of the country and the necessities of the community, and measured in its extent by the actual needs of the particular purpose for which the appropriation is made, and not for the purpose of obtaining a monopoly of the water, so as to prevent its use for a beneficial purpose by other persons; that the diversion of the water ripens into a valid appropriation only where it is utilized by the appropriator for a beneficial use; that the surplus or waste water of a stream may be appropriated, subject to the rights of prior appropriators, and such an appropriator is entitled to use all such waters; that, in controversies between prior and subsequent appropriators of water, the question generally is whether the use and enjoyment of the water for the purposes to which the water is applied by the prior appropriator have been in any manner impaired by the acts of the subsequent appropriator." Union Mill & Mining Company v. Dangberg, 81 Fed. 73.

CHAPTER V.

LOSS OF WATER RIGHTS.

Water rights, like other real property, may be lost by abandonment, forfeiture, adverse user or prescription, or estoppel.

Abandonment and Forfeiture.

Abandonment is often defined as "the relinquishment or surrender of rights or property by one person to another," but in the law of waters abandonment simply adds to the unappropriated public waters and the benefits therefrom are not intended to accrue to a particular person. It consists of the two elements, act and intention; although the latter is generally considered the "essence" thereof. As stated in Utt v. Frey (106 Cal. 397):

> The mere intention to abandon, if not coupled with yielding up possession or a cessation of user, is not sufficient; nor will the nonuser alone without an intention to abandon be held to amount to an abandonment. Abandonment is a question of fact to be determined by a jury or the court sitting as such.

The intention to abandon must be shown by nonuse and similar acts, but nonuse, unless continued for an unreasonable period, will not be sufficient. The presumption created by even an unreasonable non-use may be overcome by satisfactory proofs. The opinion of the Supreme Court of Montana in Smith v. Hope Mining Company (45 Pac. 632) is especially noteworthy as the water to run a mill had not been used

for nine years but the machinery was cared for and maintained in good condition during the period of non-use. The Court said:

> It is true that the evidence shows without controversy that the Algonquin Company did not use the waters, in their mill or otherwise, for a period of about nine years following 1883. But mere nonuser of a water right is not abandonment.
> The nonuser of water for so long a period, and especially a period longer than the statute of limitations, is certainly very potent evidence, if it stood alone, of an intention to abandon. * * * But what ever force the fact of nonuser for nine years may have had in showing an intention to abandon, that force was wholly offset and contradicted by the other evidence in the case, so as to leave, in our opinion, not even a conflict of testimony.

As riparian rights to the use of water do not depend upon use nor cease with disuse, they cannot be lost by abandonment, so that this question can only be raised regarding rights by appropriation. Although water rights and ditches are generally thought of as one, they are distinct property interests and either may be held without the other. A ditch can accordingly be abandoned without abandoning the water right. Likewise water may be turned into natural water courses for diversion at lower points without it being held an abandonment—that is, the waterway may be used as part of the ditch system. It is also held without exception that the point of diversion, the place of use and the manner of use may be changed without loss of right, provided no other user is injured thereby.

As non-use under the court rulings simply raises the presumption of abandonment, a number of the western states have fixed by statute a definite period for which non-use will work a forfeiture of the right. The prescribed period in Utah is seven years; in Wyoming and Idaho five years; in New Mexico four years; in North Dakota and South Dakota three years; in Oklahoma two years; in Oregon one year. Both the Utah and Oregon statutes contain the added provision that a question of abandonment shall be one

of fact, to be tried and determined as other questions of fact. The virtue of the two statutes is thereby destroyed as the aim of such statutes is to definitely fix the period of non-use which shall constitute a forfeiture and thus preclude court proceedings to determine the intention. The Supreme Court of Oregon in Hough v. Porter (98 Pac. 1083) recently said:

> The right to the use of water by nonuser alone cannot be deemed forfeited short of the period prescribed by the statute of limitation for real actions. Dodge v. Marden, 7 Or. 456. But such right may become extinguished by any act showing an intent to surrender or abandon the right, after which, if the person having the right ceases its use for one year, his interest is lost; but the facts essential to a forfeiture by this company are not established by the proof. The nonuse from 1893 to 1900 is shown; but this alone is insufficient. To constitute an abandonment of a water right, there must be a concurrence of the intention to abandon it and an actual failure in its use.

The leading California case on the question of forfeiture, or loss of right through non-use, and one much quoted in other jurisdictions, is Smith v. Hawkins (110 Cal. 122). The court therein distinguishes between abandonment and forfeiture, and on account of its importance the following long quotation is given:

> Section 1411 of the Civil Code declares that the appropriation must be for some useful or beneficial purpose, and when the appropriator or his successor in interest ceases to use it for such purpose, the right ceases. This section deals with the forfeiture of a right by nonuser alone. We say nonuser, as distinguished from abandonment. If an appropriator has, in fact, abandoned his right, it would matter not for how long a time he had ceased to use the water, for the moment that the abandonment itself was complete his rights would cease and determine. Upon the other hand, he may have leased his property, and paid taxes thereon, thus negativing the idea of abandonment, as in this case, and yet may have failed for many years to make any beneficial use of the water he has appropriated. The question presented, therefore, is not one of abandonment, but one of nonuser merely, and, as such, involves a construction of Section 1411 of the Civil Code. That section, as has been said, makes a cessation of use by the appropriator work a forfeiture of his right, and the question for determination is, How long must this nonuser continue before the right lapses?

Upon this point the legislature has made no specific declaration, but, by analogy, we hold that a continuous nonuser for five years will forfeit the right. The right to use the water ceasing at that time, the rights of way for ditches and the like, which are incidental to the primary right of use, would fall also, and the servient tenement would be thus relieved from the servitude.

In this state five years is the period fixed by law for the ripening of an adverse possession into a prescriptive title. Five years is also the period declared by law after which a prescriptive right depending upon enjoyment is lost for nonuser; and for analogous reasons we consider it to be a just and proper measure of time for the forfeiture of an appropriator's rights for a failure to use the water for a beneficial purpose.

In the preceding chapter it was stated that under the doctrine of prior appropriation one is given a reasonable time after the completion of the diversion works in which to apply the water claimed to beneficial use. In the case of an irrigation project this application requires a number of years which is definitely fixed in those states where appropriations are made by application to the State Engineer, but which, in states like California where the posting of notices is still tolerated, is limited only by the rule of reasonable diligence. This time limit for the larger projects has seldom been passed upon in the reported cases. The five-year period fixed in Smith v. Hawkins must not be taken as a precedent in cases of incomplete appropriations as in the latter the right to the full amount of the appropriation is conditioned upon the irrigation of all the land under the ditch within a reasonable time. Smith v. Hawkins deals with a right which had become completely vested and later fell into disuse. It is believed that the larger irrigation projects will be allowed a longer period than five years in which to apply all the water to beneficial use as the settlement of such generally necessitates a greater time.

Adverse Use or Prescription.

These are a very few cases involving the alleged wrongful divrsion of water in which a right by ad-

verse use or prescription is not pleaded. Nevertheless there are very few cases in which such title is upheld, as it is seldom that a case presents all the elements necessary to prove adverse use. In order to ripen into title the adverse use must be continuous for the statutory period, open, notorious, peaceable, under claim or color of right, and to the damage of the water-user against whom the right accrues. The burden of proof is on the claimant of the adverse title.

The statutory period referred to is the period provided in the statute of limitations regarding actions pertaining to real property. The period for the western states is as follows: Arizona, three years; California, Colorado, Idaho and Nevada, five years; Utah, seven years; Montana, Nebraska, North Dakota, Oregon, Texas, Washington and Wyoming, ten years; Kansas, fifteen years; South Dakota, twenty years. By "continuous" is not meant that the use should be unceasing for the period, but simply that the claimant used the water during such times as he needed it. In the case of irrigation the water might be needed but one day during each month of the irrigation season, and such use if made for the statutory period would be held "continuous."

"Open" and "notorious" signify that the use has not been by stealth but on the contrary "before all the world," so as to be generally known. "Peaceable" (or "uninterrupted") means that the original possessor of the right has not interfered with the adverse use. Any interference or interruption, however slight, will prevent the acquisition of the right. Mere verbal protests, however, are not considered interruptions—the latter must be due to some physical act, such as closing down a headgate, cutting a ditch bank, or breaking a diversion dam.

The claimant must consider and treat the right as his own and not acknowledge a superior claim on the part of the original owner. If at any time during the statutory period permission to divert the water has been sought, the adverse claim must fail.

That the use has been to the damage or detriment of the original possessor is generally the most difficult of the many points to prove. So long as there is sufficient water in the stream for both no such damage can result. This point is especially difficult when the adverse use is being claimed against a lower riparian owner. As such an owner does not have to use the water, no one knows what stream depletion —short of the diversion of the entire flow—will be of detriment. The problem was quite the other way in the early California cases where the riparian owner sought to enjoin an upper appropriator. In Heilbron v. Fowler Switch Canal Co. (75 Cal. 426) the company, an appropriator, claimed that its diversion would result in no appreciable injury to the plaintiff's land—a Spanish grant. Although the following quotation does not present other and very material facts upon which the court based its injunction, it shows the "one-sidedness" of the struggle between riparian owners and appropriators:

> The injury is one, also, which in its nature cannot be estimated. In the recent case of Heilbron v. Last Chance Company it was said: "The flow of the water of a stream, whether it overflow the banks or not, naturally irrigates and moistens the ground to a great and unknown extent, and thus stimulates vegetation, and the growth and decay of vegetation add, not only to the fertility, but to the substance and quantity of the soil."
>
> If this be so,—and it cannot be doubted—it is obvious that in a climate like that where this land is situated, the benefit derived from a flow of water for thirty miles along its boundary, and ten miles through it, cannot be inconsiderable, but yet the extent of benefit must ever be an unknown quantity.
>
> The defendant here states that the channel of the river above and along this land is deep, and therefore at times of ordinary flow the seepage cannot be great. If so, it must be important to plaintiffs that the channel should carry a full stream, and evidently at such times the percolation would be increased.

It is clear from the above that, unless the attitude of the court be changed, the riparian owner can easily show sufficient damage to secure an injunction, but the problem before the appropriator of showing

sufficient damage to justify a finding of adverse use is far different. As stated the only case which is certain is where the appropriator has continuously diverted the entire low water flow. Regarding the damage as between appropriators Judge Hawley in Union Mill & Mining Company v. Dangberg (81 Fed. 73) said, "There must have been such a use of the water, and such damage, as would raise a persumption that complainant would not have submitted to it unless the respondents had acquired the right to use it."

The idea is current in California that use by an appropriator for the statutory period—five years—gives an absolute right as against lower riparian owners. As indicated above, the water must not only be used but it must be used adversely, so that the current view is far from correct.

It should be apparent to all that an appropriator can secure no adverse title against an upper riparian owner, but cases are constantly arising where this plea is made. In Rogers v. Overäcker (4 Cal. App. 333) the California Supreme Court in dealing with such a plea said:

> The rule seems to be as laid down in Bathgate v. Irvine, 126 Cal. 135, 77 Am. St. ep. 158, 58 Pac. 442, and Hargrave v. Cook, 108 Cal. 72, 41 Pac. 18, 30 L. R. A. 390. In the first case it was said, approving the latter case, that a lower riparian owner cannot acquire a right, either by prior appropriation or by prescription or adverse user, as against an upper riparian proprietor whose rights antedate the appropriation and user, and the mere nonuser of the water by the upper proprietor and his permitting the water to pass down to the lands of the lower owner cannot make the user of the lower owner adverse or strengthen his claim of appropriation or prescription.

The expression "as against an upper riparian proprietor whose rights antedate the appropriation and user" refer to the well settled rule that the rights of the appropriator are superior to those of the riparian owner where the former had initiated his appropriation while the riparian land in question was unentered public land. Occasionally, even in the reported cases, the rights of the appropriator are considered superior

if initiated before patent issued for the riparian land. The present accepted view is, however, that the riparian owner's rights date from his entry of the land and not from the issuance of patent, and, therefore, to be superior, the appropriator must have initiated his rights to the water prior to the time the riparian owner initiated his rights to the land.

Estoppel.

"Estoppel by silence" arises where a person who by force of circumstances is under a duty to another to speak refrains from doing so and thereby leads the other to believe in the existence of a state of facts in reliance upon which he acts to his prejudice (16 Cyc. 681).

Although the general principles of appropriation are understood by those diverting, or intending to divert, water and especially the rule that the subsequent appropriator takes only what is left, it is very common to have the claim made that no notice of the rights of the opposing party was given and that said party is estopped from setting up a superior right. The courts very early in the mining period expressed themselves strongly to the contrary but the claim still persists. In a recent California case dealing with underground waters it is said:

> **The mere fact that the defendants expended money in sinking the wells and putting in the pumps each upon his own land, with the knowledge of the plaintiffs and without objection by them, creates no estoppel. A mere passive acquiescence when one is under no duty to speak does not raise an estoppel." (Verdugo Canyon Water Company v. Verdugo 152 Cal. 655).**

Practically the same language has been used in a number of cases where the point was raised. It is therefore established beyond doubt that neither a riparian owner nor an appropriator need serve notice of existing rights upon a subsequent appropriator engaged in the construction of diversion or storage works.

Rights of Way by Prescription.

Rights of way for ditches may be acquired by prescription in the same way as water rights. The

most serious element in so proving is the "color of title." After a ditch has been constructed and operated for years it is very difficult to show that the right does not rest upon permission to occupy given by the owner of the land crossed—that is, parol license. The statute of frauds provides that interest in real property can be conveyed only by written instruments. As a ditch right of way is such an interest, the original and strict legal rule is that the right cannot be founded on a parol license; but the rule has been modified, if not reversed, in a great many of the states.

In the very recent case of Gustin v. Harting (121 Pac. 522), decided Feb. 17, 1912, the Supreme Court of Wyoming considered at great length the question as to whether the plaintiff had acquired a right of way for a flume by prescription and also the right to maintain it under an irrevocable license—it being admitted that the flume had been constructed with the parol consent of the landowner, the defendant. It was held that, under the existing facts, the license was irrevocable and the right to maintain the flume secured by prescription. In reaching its conclusion the Court said:

> The principle that a parol license, when executed by the expenditure of money or labor, if not given for a mere temporary purpose, becomes irrevocable, has been recognized and applied in several other cases involving irrigating works.

Among the many cases cited and examined in support of the principle are some from California, Colorado, Nebraska and Oregon, showing that they also recognize the modified rule. To these Utah may be added.

The Supreme Courts of Montana and Washington refuse to accept the modified rule. In Archer v. Chicago M. & St. P. Ry. Co. (108 Pac. 571), decided April 2. 1910, the Supreme Court of Montana considered cases in favor of the new rule but held that, "sound * * * reasoning sustains the rule that a parol license of the character of the one under consideration is always revocable at the pleasure of the licensor."

CHAPTER VI.

WATER RIGHT LEGISLATION.

Legislation regarding water rights to be complete must provide for the acquirement of rights, for the definition or adjudication of existing rights and for the distribution of water among those entitled to its use.

California.

With the exception of the Statutes of 1911, dealing with the appropriation of water for power purposes only, Sections 1410 to 1422 of the Civil Code contain all of California's legislation in regard to the acquisition of water rights.

As previously stated these sections simply provide for the initiation of rights by the posting of notices and for the benefits of the doctrine of relation if the works are completed with reasonable diligence. There is no provision for public inspection at any stage.

There are no statutes specially providing for the adjudication of water rights, and disputes between ditch owners are subject to the regular court procedure. The litigation is, therefore, between two or more claimants, and rarely are all the appropriators brought into a single action. Where there are many diversions, as is the case on the ordinary stream, there may be an indefinite number of actions without all the rights on the stream being adjudicated.

Likewise, there are no statutes providing for the distribution of water according to decree. Ordinarily the successful contestant has to resort to either force or contempt proceedings in order to obtain what the

court has given him, and the former is too frequently the choice.

Colorado.

Acquirement of Rights.—The first statutes regarding water rights adopted in the various western states were patterned after those of California. The first state to make any advance was Colorado where the office of state engineer was established in 1881.

At the same session the so-called "Map and Statement" act was adopted but, owing to a defective title, was held unconstitutional in 1899. A second act, very similar to the first, was passed in 1903, and now governs the acquirement of rights. It provides that within sixty days after the commencement of the surveys or of the actual construction of any ditch or reservoir or enlargement or extension thereof, a filing must be made in the office of the state engineer of duplicate maps and statements containing the information required by the act and of a form satisfactory to the state engineer. If satisfactory to the state engineer one copy is filed in his office and the other approved and certified and returned to the claimant who must, within 90 days from date of commencement, file it in the office of the county clerk of county in which the headgate or reservoir lies. It is further provided that a certified copy of the map and statement shall be prima facie evidence of the intent of the claimant. The Act of 1881 provided that the right dated back to the commencement of the work upon compliance with the act and the exercise of reasonable diligence in construction. The present act is silent on this important point but where all the prescribed steps are taken the courts will undoubtedly hold that the right dates from the commencement of the work.

The state engineer has issued a circular containing the list of fees (Act of 1911), text of forms, and the rules and regulations in regard to the preparation of maps and statements. The circular states, "It is compulsory to use the forms of statements and affidavits as given herein. It will save time and delays."

There is no question, therefore, but that the state engineer has a satisfactory record of the intention of new appropriators in Colorado, but there his supervision ends. Other than the provision that due diligence in construction must be exercised, the act is silent regarding any record of proof thereof, so that the claimant, in case of dispute, must settle the point in the courts, as in California. In regard to the acquirement of rights, therefore, Colorado has but slightly improved upon California.

Adjudication of Rights.—Colorado in 1879 and 1881 adopted a special procedure for the adjudication of water rights. It was provided that on or before June 1, 1881, every claimant of an interest in a ditch or reservoir within any water district should file with the clerk of the district court having jurisdiction a sworn statement setting forth among other things the date of his appropriation by original construction, also by enlargement or extension, the amount of water claimed, the existing capacity of ditch and the number of acres lying under and being or proposed to be irrigated by each ditch or reservoir. Since the date for filing such claims, June 1, 1881, an adjudication of all rights to water from a common source within a district is initiated by one or more interested persons (who have filled the required claim) petitioning the district court having jurisdiction. The judge either sets a day for the taking of evidence in open court or, as is the usual practice, appoints a referee to take and report the evidence, make an abstract and findings upon same and prepare the decree. The referee gives notice of the times and places at which he will take the required evidence and proofs of priority. In regard to the facts to be ascertained by proofs the act provides:

> Said referee shall also examine all witnesses to his own satisfaction, touching any point involved in the matter in question, and shall ascertain as far as possible the date of the commencement of each ditch, canal or reservoir, with the original size and carrying capacity thereof, the time of the commencement of each enlargement thereof, with the increased carrying capacity

thereby occasioned, the length of time spent in such construction or enlargement, the diligence with which the work was prosecuted, the nature of the work as to difficulty of construction, and all such other facts as may tend to show compliance with the law in acquiring the priority of right claimed for said ditch, canal or reservoir; and upon all the facts so obtained shall be determined the relative priorities among the several ditches, canals and reservoirs, the volume or amount of water lawfully appropriated by each as well as by means of the construction, as to the enlargements thereof, and the time when each such several appropriations took place.

After closing the testimony the referee prepares the report and form of decree and files it with the court, which after properly ordered hearings either approves or modifies the same.

The act provides in detail for the many steps in the procedure and is sound from the technically legal standpoint. Its weakest point is that it does not provide for representation of the public or the state. Many of the older decrees gave to each party the amount of water claimed, which was generally far in excess of the maximum capacity of the ditch. There should have been measurements by the state engineer of the ditches and the acreage irrigated, but he is not mentioned in the act. Furthermore, the districts with which the act deals do not always include an entire stream, so that the adjudication in such cases is but partial. Aside from the trouble caused by the excess decrees, the act is to be commended as providing at so early a period in the history of irrigation a special procedure whereby most of the rights were determined.

Distribution of Water.—By an act passed in 1879 Colorado divided its irrigated territory into a number of districts generally comprising a designated creek, or creeks, and tributaries. For each district there was provided a water commissioner to be appointed by the governor from persons recommended by the boards of county commissioners interested. The principal duty of the water commissioner is to divide the waters of a stream among the ditches according to the prior rights

of each, and in so doing to wholly or partially shut the headgates of the later appropriators to satisfy the earlier rights. He is also authorized to shut off the supply from any ditch so that the water delivered will in his judgment not allow a wasteful or wrongful use. The changing or interference with any headgate adjusted by the water commissioner is a misdemeanor subject to a fine of $300, or an imprisonment of 60 days, or both, and the use of water so wrongfully taken through such a headgate is made prima facie evidence of the guilt of the user. The water commissioners are further empowered to arrest persons meddling with headgates or using water procured through such. The salary of the water commissioner is $5 per day and is paid by the counties served. He does not begin work until called on by two or more persons controlling ditches in his district, or by the division engineer. He may engage necessary assistants at $2.50 per day.

In 1887 Colorado was divided into four divisions along drainage lines with a division superintendent in charge of each division. In 1903 the number was changed to five and the title to division engineers, who are now appointed by the governor from a certified list prepared by the state engineer after an examination of applicants. The division engineers receive $125 per month when actually employed and traveling expenses not in excess of $500 per annum, and are paid by the state. The division engineers have general control over the water commissioners of the several districts within their divisions, and, under the general supervision of the state engineer, execute the laws relative to the distribution of water. They may make regulations to secure the fair apportionment of water in accordance with the rights of priority. They are required to make stream measurements and rate ditches, and to perform such other duties as the state engineer may direct. Ditch owners feeling themselves injured may appeal from the acts of water commissioner to division engineer and from the latter to the state engineer.

It will be readily appreciated that the task of dividing water among ditches with valuable crops at stake is a serious undertaking, and on account of the daily variations in the flow of mountain streams requires much local study and experience. Colorado's plan of having a small number of great divisions along drainage lines each with a state official having jurisdiction therein, and a number of districts within each division of such size that the diversions may be regulated by one man and an assistant or two, was not only the first to be fixed by statute but remains the type to be followed at the present day.

Wyoming.

Acquirement of Rights.—The office of territorial engineer in Wyoming was created in 1886 but the existing legislation of which the state is so proud, came with statehood in 1890. By constitutional provision the state is divided into four divisions (the limits being fixed by the legislature) with a division superintendent at the head of each, the office of state engineer is provided, and a Board of Control consisting of the state engineer, as president, and the four division superintendents, is given "supervision of the waters of the State, and of their appropriation, distribution and diversion" subject to legislation thereon.

The statutes adopted in 1890 provide a method of acquiring rights very different from any then existing in this country. Instead of posting a notice or starting work and thus initiating a right, the intending appropriator is required to make application to the state engineer for permission to make the appropriation. The application is made on a blank form furnished by the state engineer and among other things must state the location and description of the proposed ditch, the time within which it is proposed to begin construction, the time required for completion of construction and the time required for complete application of water to proposed use. If for irrigation, the application must also give the legal subdivisions of

land proposed to be irrigated. The state engineer must approve all applications made in proper form and for beneficial purposes except where there is no unappropriated water, or where the proposed use conflicts with existing rights, or threatens to prove detrimental to the public interest—in which cases he must reject the application.

If approved, the application will be so endorsed and returned to the applicant and constitutes his authorization to begin construction and perfect the appropriation.

In cases of applications in excess of 25 second feet, or to reclaim over 1000 acres, the state engineer, before acting on the application, may require additional information in regard to the financial ability and the good faith of the applicant. In the endorsement of approval on the application it is required that actual construction must begin within one year from date of approval and that the construction must be completed within five years. The state engineer has authority to limit the construction period and the period required for application to beneficial use to a less time than asked for, and also, for good cause shown, to extend the time for the completion of works under an issued permit. Any party may appeal from any action taken by the state engineer to the Board of Control, and from an action by the Board to the digtrict court.

Applications must be accompanied by maps preparced in accordance with the regulations of the state engineer, and profiles and plans may be required also.

The statutes do not provide the nature of the proof to be submitted by the appropriator on the completion of the works and on the complete application to beneficial use other than it "being made to appear to the satisfaction of the Board of Control that any application has been perfected in accordance with such application, and the endorsement thereon." On such a showing the Board must issue a certificate setting forth the amount of the appropriation and the

number and date of priority thereof, which date shall be that of filing the application in the office of the state engineer.

In 1903 a statute specially providing for the appropriation of water for storage in reservoirs was adopted. The steps outlined above must be followed except that a description of the land is to be irrigated by the stored water is not required in the primary, or first, permit. Those who are to apply the water to beneficial use may secure the secondary permit allowing them to so do. The latter shall not be given until the state engineer is convinced that the secondary permittee has a sufficient agreement with the owner of the reservoir, the primary permittee. The 1903 statute also provides for special supervision by a water commissioner when such stored waters are allowed to run to points of use through natural channels and where loss through wrongful diversion is probable en route. When deemed necessary for the protection of the various interests involved, the state engineer may appoint an assistant engineer to superintend and direct the construction work on dams for such reservoirs.

Wyoming has thus introduced a sensible business-like procedure for controlling new rights to the use of water. Those accustomed to the absolute want of supervision in states still following the California method of posting notices are inclined to be suspicious of the Wyoming method when first brought before them. They are especially fearful of the seeming great authority in the hands of the state engineer. An inspection of the records, however, will show so few applications rejected in Wyoming that the number is negligible. As the question of whether there are any unappropriated waters in a stream is so debatable and as the opportunity for flood waters and seepage and return waters is so great, the state engineer, in cases where there seems to be but little surplus approves the application with the following notice stamped upon it:

The records of the state engineer's office show the waters of ..... to be largely appropriated. The appro-

priator under this permit is hereby notified of this fact and that the issuance of this permit grants the right to divert and use the surplus or waste water of the stream and confers no rights which will interfere with or impair the use of water by prior appropriators.

Definition of Rights.—Although new to American legislation the Wyoming method for the acquirement of rights is far less novel than her method for the definition of rights. In 1886 Wyoming, then a territory, adopted the Colorado system of adjudication but rejected it in 1891 for its present system.

Instead of leaving the determination of water rights to chance cases between two or more claimants as in California, or to a special procedure initiated by a claimant as in Colorado, Wyoming, having by its constitution declared the natural waters to be the property of the state, decided to make its new Board of Control responsible for this most important matter.

The Board selects the streams on which rights are to be determined and fixes a time for the taking of testimony. The state engineer through assistants makes a survey of the ditches and the land irrigated or irrigable thereunder and measures the stream and carrying capacity of the ditches. A printed form, called "proof of appropriation," is sent to each claimant. The present practice is to have the division superintendent make the survey and have the claimant make the "proof of appropriation" on the completion of the survey of his individual holding, so that the "proofs" and survey will correspond.

On the completion of the survey and the taking of testimony or "proofs" by the division superintendent, notice is given of a time and place at which the evidence thus assembled shall be open to inspection of the various claimants. A regular procedure is provided for contests and hearings before the division superintendent, if such are required after the open inspection.

After the contests all the evidence, including original proofs and testimony taken at the subsequent hearings, is transmitted to the Board of Control. At

its first regular meeting thereafter, the Board examines all the evidence and enters an order establishing the priorities of the water rights, their amounts, and the character of use of each. For irrigation rights, the maximum allowance is one-seventieth of a second foot to the acre. Certificates are issued to each claimant in accordance with the order of the Board. Appeals from the order may be taken to the district court within sixty days.

Distribution of Water.—As stated above, Wyoming has been divided into four divisions along drainage lines. The superintendents thereof have powers similar to those of the division engineers in Colorado, regarding the division of the waters among ditches entitled thereto. The Board of Control creates districts where necessary and these districts are in charge of water commissioners upon whom the actual duty of closing headgates rests. The entire Wyoming procedure in regard to this matter is copied from that of Colorado and what difference exists is only in minor details.

Nebraska.

In 1889 Nebraska adopted legislation providing for the appropriation of water by posting notices as in California, but in 1895 introduced an entirely new system closely following that of Wyoming. As the State at that time was in financial straits it aimed to create as few new offices as possible and therefore provided that its state board of irrigation should be composed of the governor, attorney-general, and the commissioner of public lands and buildings. In 1911 the name of the board was changed to "The State Board of Irrigation, Highways and Drainage." The board appoints an hydraulic engineer as secretary and he is known as the state engineer. The striking difference between the statutes of Wyoming and Nebraska is the comparative brevity of the latter—otherwise the Wyoming language is closely followed.

Acquirement of Rights.—The sections providing for the acquirement of rights are practically the same

as those of Wyoming. The application is made to the board (the secretary, or state engineer, acting for the board) on a printed form furnished by the state engineer, and when in proper form is approved "if there is unappropriated water in the source of supply * * * and if such appropriation is not otherwise detrimental to the public welfare." It is elsewhere further provided, however, that "if a prior appropriation has been made to water the same land to be watered by the applicant" the application shall be rejected.

It was undoubtedly intended by those who drafted the section that a "prior appropriation" meant a perfected appropriation—that is actual use, or potential use, of water on the land. It is rather an empty expression from any practical point of view and is one instance where the Wyoming section was not followed. Unfortunately for the state the expression was construed by its Supreme Court in Farmers' Irrigation District v. Frank (100 N. W. 286) and it was held that the board could not approve an application to irrigate any land described in an approved application. As the law did not provide that an applicant must make any showing of his title or interest in the land described, the effect of the decision was to deprive one of his right to appropriate water for the simple reason that some promoter had described his land in a former application which had been approved without any notice to the land owner.

In the case cited, Frank had described thousands of acres belonging to residents of the Farmers' Irrigation District. The case was decided in 1904 and although it evoked bitter criticism from those deprived of what they believed to be a "natural right" the section was not amended until 1911, when the following words were inserted, " * * * and no permit to irrigate any land shall be allowed unless the owner or owners of such land shall give consent to the same in proper form, duly acknowledged before some officer legally qualified to take acknowledgements."

Definition of Rights.—The "definition of the priorities of right to use the public waters of the state" is left to the board of irrigation. Instead of fixing a detailed procedure as in Wyoming the statute provides that "the method of determining the priority and amount of appropriation shall be determined by the said state board." The board accordingly has adopted rules to govern the taking of "proofs of appropriation" and hearings in cases of contests.

As in the case of applications to acquire rights, the real work is left to the state engineer. Most of the determinations of the old rights have been made without actual surveys by the state engineer. The state was, therefore, quickly covered, but it is probable that in some cases larger acreages were allowed than should have been.

After the completion of the determination "certificates of appropriation" are issued to appropriators, as in Wyoming, the maximum allotment for irrigation being one second foot for each 70 acres and in no case to exceed three acre feet per year (as amended in 1911). Appeals may be taken to the district court within 60 days of the determination.

Distribution of Water.—The system for dividing water among the ditches entitled to its use is the same as in Colorado and Wyoming. By statute the state has been divided into two divisions with division superintendents in charge. Before 1911 the title was "under-secretary."

Prior to 1911 the state board created districts within the division on the petition of interested parties, but in 1911 the board was empowered to divide the divisions into subdivisions and the latter into districts as they believed necessary. The board appoints one water commissioner for each district. (Prior to 1911 the title was "under-assistant.") In 1911 it was provided that appropriators on April first of each year must give the division superintendent a list of the lands to be watered during the year.

Idaho.

The office of state engineer was created in Idaho in 1895, but his duties were principally in regard to operations under the Carey Act until the adoption of the "new legislation" in 1903.

Acquirement of Rights.—Idaho follows the system introduced by Wyoming of making intending appropriators apply to the state engineer on printed forms furnished by him. The instructions issued by the state engineer state that "application will not be accepted nor permit granted thereunder, unless the following instruction are carefully carried out, in preparing the application blank and maps"—it being required that duplicate maps must be filed before the permit will be granted and where the application is for more than 25 second feet the maps must be prepared from actual surveys.

As the Idaho constitution provides that "The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses, shall never be denied," the right of rejecting applications deemed detrimental to the public welfare, etc., has not been delegated to the state engineer, but he must approve all applications made in proper form and contemplating application to beneficial use.

The maximum allowance for irrigation purposes is one second foot to 50 acres, and the maximum time allowance to complete the construction of works is five years and that for applying water to beneficial use four years in addition thereto. (The state engineer has no authority to extend the maximum time allowance. Such authority is given in other states and should be as the limits set are too small for the larger projects.) It is further required that one-fifth of the construction work shall be done in one-half the time allowed and adverse claimants may contest the right when this is not done. For appropriations not in excess of 25 second feet construction work must be commenced within sixty days of issuance of the permit, and for other appropriations a bond in an amount to be fixed by the state engineer, not exceeding $10,000,

must be filed within the said sixty days with the state engineer as a guarantee that the work will be completed as provided in the permit.

The 1903 Idaho statute was the first to provide a regular procedure for proofs of completion of construction and also proofs of complete application to beneficial use. At least sixty days prior to the date set for the completion of the works the holder of the permit must notify the state engineer of readiness to submit proof, on a form furnished by him containing among other information the amount of water such works can carry and, if for irrigation, the description of the land which can be irrigated. In cases of diversions in excess of 50 second feet the facts set forth in the notice must be certified to by a competent irrigation engineer. The notice is published by the state engineer in a paper of general circulation in county where works are situated and such publication also states the time and place of submission of final proof. Before the time set the state engineer has the works inspected and after such time, and the consideration of any protests which may be made, he issues a certificate stating among other things the purpose of works, the quantity of water which can be carried to place of use, and, if for irrigation, a description of the lands for which water has been made available by the works.

The same procedure is followed in submitting proof of complete application to beneficial use. If satisfied that the law has been complied with after an examination of all the evidence in relation to such final proof, the state engineer issues a license confirming such use. The date of priority of right under such license is that of filing of application in state engineer's office.

Adjudication of Rights.—The 1903 Idaho statute left the adjudication of water rights to the courts, but provided that actions could be initiated by a water commissioner for the adjudication of rights to the waters ot a stream which had been partly adjudicated.

It was also provided that whenever a suit to adjudicate rights is filed the court "shall request the state engineer to make an examination of such stream, and the canals and ditches diverting water therefrom, and of all the land being irrigated by such canals and ditches and other works," and the map and report resulting from such examination shall be "accepted as evidence in the determination of such rights by such court."

The provision for the initiation of actions by a water commissioner was declared unconstitutional in Bear Lake v. Budge (75 Pac. 615). In Boise City Irrigation & Land Company v. Stewart (77 Pac. 25) the provision for requesting the state engineer to examine and report upon the physical conditions was held to be merely directory and not mandatory. The preparation of physical data by the state engineer has been so satisfactory, however, that it is certain that the court will request his services in most cases. The costs of his work are apportioned by the court among the parties to the suit, become a lien against the real property in question, and, if necessary, are collected as ordinary taxes.

Distribution of Water.—"For the purpose of administering and controlling the public waters," Idaho is divided into three water divisions with limits fixed by statute. The governor appoints a water commissioner for each division. The three water commissioners and the state engineer compose the state board of irrigation. The board "shall devise all needful rules for the distribution of water." It divides the divisions into water districts for which water masters are elected by the water users of the district.

Utah.

As the first Mormon settlements in Utah were absolutely dependent upon agriculture, and that upon irrigation, the need of legislation regarding water rights was early recognized. The first territorial legislature, in 1852, gave the control of all "water privileges" to the county courts and authorized them to

"exercise such powers as in their judgment shall best * * * subserve the interests of the settlements in the distribution of water for irrigation or other purposes." The court of Salt Lake County was the only one to act under the statute and it granted water rights, settled disputes in regard thereto and appointed water masters to distribute water according to decrees. The court at that very early date acted about as the Board of Control does in Wyoming today, and if the other county courts had done likewise there would have been no need of further legislation.

Due to the neglect of the courts, other than that of Salt Lake County, to enforce the law, other legislation was adopted in 1880 and in 1897—the latter following the California statutes. The office of state engineer was also created in 1897 but he had little authority regarding water rights until 1903 when the present statute was adopted.

Acquirement of Rights.—The present system of acquiring water rights in Utah is based on that of Wyoming and Nebraska. The application contains the additional information of "the time during which it (the water) is to be used each year"—that is the right is, or may be, restricted to certain periods within the year. A notice of the application must be published for 30 days in a newspaper of general circulation within the watershed so that a protest may be made to the state engineer by parties claiming prospective injury and thus assist him in determining whether the new appropriation will conflict with existing rights.

The 1903 statute provided for a hearing in case of protests, but in 1904 such a procedure was prohibited by court order. No appeal was taken to the supreme court and the provision was omitted when the law was re-enacted in 1905.

The 1903 statute also authorized the state engineer to reject an application which he deemed detrimental to the public welfare. Following such an action in 1904 the state engineer was reversed by court decree and, again, the case was not appealed and the

provision was omitted in the 1905 statute. By an amendment of 1911, the state engineer must approve all applications except where they will conflict with existing rights, or where, after submission of the question to court, the latter decides that the application is not for the most beneficial use of the water. The question of "best beneficial use" and the feasibility of projects is to be answered by data being collected by a Conservation Commission.

By an amendment of 1911 Utah follows the Idaho statutes regarding time of beginning and completing work and application to beneficial use, but the state engineer is authorized, for good cause shown, to extend the five-year and four-year periods to a maximum aggregate allowance of fourteen years from date of approval of application.

Proof of completion of work is made on regular forms, attested by two witnesses, and accompanied by certified detailed maps. The state engineer issues a certificate of appropriation when satisfied that "the appropriation has been effected."

Adjudication of Rights.—Under the system adopted in 1903 the adjudication of rights is initiated by the state engineer making a complete survey of the "river system or water source" and collecting all necessary data. After completion of survey a statement is filed with clerk of district court who mails form for statement of claim to each claimant. The state engineer tabulates the claims and files such with clerk of court. The court may appoint a referee to take further testimony. The decree is rendered by the court based on the maps and data of state engineer, the statements of claims, and the testimony taken before referee. A certificate is issued to each owner in accordance with the decree.

The system has not yet been fairly tried as the surveys and collection of data have not been completed for the first stream chosen—the Weber River. The early work was done on an elaborate scale, and the funds necessary for completion are not available.

Distribution of Water.—The state engineer is authorized to divide the state into water districts and a water commissioner is appointed by the governor for each district from persons recommended by the state engineer. These water commissioners have the same duties as in the states already discussed, the only innovation is that the state has not been divided into large divisions with superintendents in control.

Nevada.

Nevada first legislated regarding water claims in 1866 when it provided for the filing of certificates and plats by intending appropriators. Further legislation was adopted in 1889 and in 1899—the latter being copied after the Wyoming statute, but as the county instead of the state was made the unit nothing was done. In 1903 through the efforts of Senator Newlands who had been probably the foremost leader in securing the passage of the National Reclamation Act of June 17, 1902, the Nevada legislature created the office of state engineer and provided for the definition of water rights and the distribution of water. The influence of the expected benefits of the Reclamation Act on the passage of the 1903 Nevada act is shown by the preamble to the latter, wherein the entire Reclamation Act is recited and in addition many paragraphs presenting the opportunities for irrigation development in Nevada and the need of a determination of rights before national aid could be given.

Acquirement of Rights.—The 1903 statute contained no provision for the acquirement of rights but it was supplemented in 1905 by sections so providing copied from the Wyoming and Nebraska statutes and containing the requirement of publication first adopted in Utah. In 1907 the maximum quantity which could be appropriated for irrigation purposes was fixed at three-acre-feet per acre per year. This maximum annual allowance was changed in 1909 as follows:

In all parts of the state where water cannot be beneficially used for irrigation for a greater period than six months each year the maximum quantity appropriated for each acre shall not

exceed three (3) acre-feet per annum. In all parts of the state where water is beneficially used for irrigation for a period of nine months or more in each year, the maximum quantity of water that may be appropriated shall not exceed three (3) acre-feet for the five months beginning May 15th and extending to October 15th of each year, for each acre of land supplied, and the maximum quantity of water that may be appropriated for each acre during the remainder of each year shall not exceed one-half of one-acre foot multiplied by the number of months of each year other than the five months hereinbefore named, during which water is so beneficially used

Definition of Rights.—The 1903 statute provided a method for defining rights which is still in force and which follows the Wyoming system except that no details of procedure are prescribed. The state engineer is alone responsible for the work. He makes the surveys, collects the necessary data, tabulates the "proofs of appropriation" submitted by claimants, determines the priority and amount of each claim, and finally issues a certificate to each water right owner. The 1903 act allowed two years after the determination in which aggrieved parties might bring action in the courts, but the time was reduced to one year in 1907.

Distribution of Water.—In 1901 a state board of irrigation consisting of the governor, attorney-general and surveyor-general was created to co-operate with federal bureaus in stream gauging and irrigation investigations. In 1903 the state engineer was made a member and secretary of the board. The board has authority to divide the state "into such water divisions or water districts as seem to it advisable," and may appoint water commissioners to divide the waters of streams according to priorities.

New Mexico, North Dakota, Oklahoma and South Dakota.

In accordance with resolutions adopted by the legislatures of Oregon and Washington in 1903 a commission was appointed by the governor of each state to draft a water code. As a result of a joint session of the two commissions with officials of the United States Reclamation Service, Mr. Morris Bien, super-

vising engineer of the Service in charge of land and legal matters, agreed to prepare a draft for the commissions. Mr. Bien's draft was widely circulated in order to receive the benefit of the criticism of many interested in the subject. The corrected draft is generally referred to as the "Bien Code," and although Mr. Bien aimed to take what he considered best from all the existing codes, most closely follows the 1903 Utah statute. It was not adopted in Oregon and Washington but was in North Dakota, Oklahoma and South Dakota in 1905 and in New Mexico in 1907.

Acquirement of rights. As provided in the 1903 Utah statute, applications must be made to the state engineer who, for stated causes, has the power of rejection. Notice of application is published and evidence of interested parties considered. In case of approval the state engineer fixes the time for completion of works and for application to beneficial use, not exceeding five years and four years additional respectively from date of approval. He has the power, for causes stated, to extend such times three years and two years respectively. Regarding the proof of completion of works and application to beneficial use the code follows Idaho.

Adjudication of rights. That part of the code dealing with the determination of water rights is restricted to five short sections. The state engineer makes "hydrographic surveys and investigations of each stream system * * * obtaining and recording all available data for the determination, development and adjudication of the water supply of the state." Upon completion of survey, the state engineer delivers what data is deemed necessary to the attorney general who enters "suit on behalf of the state for the determination of all rights to the use of such water, in order that the amount of unappropriated water subject to disposition by the state under the terms of this act may become known."

In any suit over water rights all claimants must be made parties and when such suit is filed, the court shall direct the state engineer to make surveys and assemble

the necessary data. The aim of the sections is to allow the state engineer to secure a determination of the rights on streams most used for irrigation and also to provide for a complete determination on those streams where suit is entered by private parties.

Distribution of Water. The distribution of water is cared for as in the states previously discussed. The state is divided by the legislature into three or more divisions along drainage lines. A commission is appointed for each division and the commissioners with the state engineer form the board of water commissioners. The state engineer divides each division into districts and the commissioner appoints a water master for each district.

Oregon.

As stated above, Oregon appointed a "water code commission" in 1903, but little was done at the 1905 session of the legislature beyond creating the office of state engineer. In 1907 a second commission recommended the "Bien Code" but it did not pass. In 1909, following the recommendation of a commission which had at its disposal the able assistance of Clarence T. Johnston, then State Engineer of Wyoming, a code was adopted which varies but little from that of Wyoming.

The state is divided into two water divisions with a division superintendent in charge. The two superintendents and the state engineer form the board of control. Contrary to the uniform practice elsewhere all three offices are elective instead of appointive.

The only striking departure from the Wyoming system is the procedure for defining rights. The sections in regard thereto are almost word for word the Wyoming sections up to and including the determination of rights by the board of control. Instead of considering such final unless appealed from, the Oregon statute provides that a certified copy of the determination and the original evidence shall be filed with the clerk of the circuit court which fixes a time for hearing the determination. The court after the necessary hearings

either affirms or modifies the determination of the board.

A minor difference in the method of adjudication is that the determination in Oregon is initiated not by the board of its own motion but by petition of one or more water users upon the stream. As the board always has before it more petitions for determinations than it can act upon, it is clear that the change in procedure is of no practical importance.

The new legislation adopted in the western states prior to the 1909 statute in Oregon, is silent in regard to riparian rights, although such rights are recognized in Nebraska and the Dakotas. The Oregon statute, however, provides that the use of riparian proprietors shall be limited to the extent of the beneficial use prior to the passage of the act or, where works were under construction at the date of passage, to the amount of water applied to beneficial use in a reasonable time as fixed by the board of control. This part of the statute is of very doubtful validity as it is generally understood that the legislature is powerless to limit a vested right and the riparian right does not depend upon use.

Review of Legislation.

In May, 1904, the state engineers of the eight states then having the office formed the Association of State Engineers. The first regular meeting was held at Boise, Idaho, in September, 1904. As a result of a close examination of the provisions of the various statutes it was then agreed that the only difference of importance was in the method of determining rights, and the same view is held today.

In Wyoming, Nebraska and Nevada rights are determined by a state engineer or engineering board, subject to review by the courts on appeal. The method has the advantage of freedom from embarrassing procedure as the officials collect the necessary field data and proofs and are so familiar with the essentials that the irrelevant is summarily eliminated. The rights are accordingly determined with comparative speed and at low cost.

In Colorado, Idaho, Utah, North Dakota, Oklahoma, South Dakota and New Mexico adjudications are made by the courts after the assembling of physical data by the state engineer—except in Colorado where the state engineer has no connection with the adjudication. The chief argument of the proponents of this legislation is that no other method is legally sound. It so happens, however, that the board or administrative method has been upheld by the supreme courts of Wyoming and Nebraska, and the court method has been held unconstitutional in Idaho—the only case in which it has been before the courts (again excepting Colorado).

The constitutionality of the Wyoming statute providing for the new system of defining rights was questioned in Farm Investment Company v. Carpenter (61 Pac. 266) decided May 26, 1900—after the statute had been in operation ten years. The Supreme Court in upholding the statute made the following pertinent statement regarding the efficiency of the two methods:

> As between an investigation in the courts and by the board, it would seem that an administrative board, with experience and peculiar knowledge along this particular line, can, in the first instance, solve the questions involved, with due regard for private and public interests, conduct the requisite investigation, and make the ascertainment of individual rights, with greater facility, at less expense to interested parties, and with a larger degree of satisfaction to all concerned.

In the same case it was contended that although the system might be valid for defining rights which had accrued subsequent to the adoption of the constitution, it was certainly invalid for defining rights accruing prior thereto and the Court answered:

> It follows from what has already been said that in this regard there exists no difference between claimants whose rights accrued prior to, and those acquiring rights after, the adoption of the constitution and the statute in question.

In Crawford v. Hathaway (93 N. W. 781) the validity of the Nebraska statute was atacked and the Supreme Court said:

> The Wyoming statute, from which ours is borrowed, has been subjected to judicial construction and is upheld by the

Supreme Court of that State on the express ground that the powers authorized therein are not judicial, but administrative. * * * With this authoritative construction of the statute, and a decision of the very question raised in the case at bar upon reasoning quite convincing and satisfactory, it would seem that the question should be regarded as at rest. The primary object of the board is for the purpose of supervising the appropriation, distribution and diversion of water. This is obviously an administrative rather than a judicial function.

In Bear Lake v. Budge (75 Pac. 614) the Idaho Supreme Court held invalid that part of the 1903 statute providing for the initiation by a water commissioner of suits to determine water rights, in the following words:

Said provision also violates the provision of our statutes which requires suits to be brought in the name of the real party in interest. The water commissioner, a public official, is not the real party in interest in a suit to quiet title or to determine adverse interest in property not claimed by or belonging to him or the state.

The new Oregon method is designed to meet the objections of those who contend that only a regular judicial tributnal should establish water rights. As stated above, the 1909 Oregon statute provides for an immediate affirmance or modification of the determination of the board by the circuit court. Regarding this feature Mr. Lewis, State Engineer of Oregon, in his third biennial report (1909-1910) states:

It is doubtful if the requirement of a confirmation by the court strengthens the water code. On the other hand it is argued that this simply prolongs the proceeding unnecessarily and that the determination of the board, the members of which are supposed to have a special and technical knowledge of the conditions involved, should be final without the intervention of the court, except upon appeal. It is also argued that such appeal should only be allowed to the Supreme Court thus saving the delay occasioned by taking the matter first into the Circuit Court and then to the Supreme Court.

Acquirement of Rights. It has been stated that the following states have state engineers to whom applications on furnished printed forms must be made by intending appropriators: Wyoming, Nebraska, Idaho, Utah, Nevada, New Mexico, North Dakota, Oklahoma,

South Dakota and Oregon. The state engineer of each of the above states will send an application blank and instructions on request and every intending appropriator should follow the directions carefully and rigidly and thus avoid later trouble. To the above list Colorado should be added as the state engineer there issues instructions regarding maps and statements to be filed within sixty days after the commencement of surveys or actual construction of any ditch or reservoir.

Texas requires the filing of a map and statement within 90 days after commencing construction, in the office of the county clerk of the county where headgate is situated.

The remaining western states, Arizona, California, Kansas, Montana and Washington still follow the crude practice of posting notices.

At the close of the first chapter of this book an example of a California water notice, accepted by the Supreme Court, was given to show how little definite information need be stated in the notice to meet the requirement. The following form of notice has been used by the United States Reclamation Service in the states last mentioned and with slight changes and omissions can be adapted to any case.

Form of Notice of Water Appropriation.

.....claims at the point where this notice is posted, all the unappropriated waters of the ..... River, both surface and underflow, more specifically stated as amounting to ..... cubic feet per second*

This notice is posted on ..... 190...., on a..... tree on the ..... bank of the ..... River, in Sec. .....T.....R.....M., at a point distant..... feet and bearing ..... from the..... corner of said section.

The water is to be used for irrigation, domestic, power, mechanical and other beneficial uses in and upon lands situated in ..... counties and located in the following townships .....

The water hereby appropriated is to be stored by means of a dam located in Ses.....T.....R..... in a reservoir located in Ts.....R.....and will be conducted to the points of intended use by means of canals, flumes, pipes, tunnels, or other appropriate means of conveying water, of the following dimensions: ....., or such other dimensions and grade as will give capacity of ..... cubic feet per second.

*In California the amount should be stated in inches under four-inch pressure.

In Arizona the territorial laws (first state legislature now in session) require that a copy of the notice must be recorded in the office of the county recorder of the counties in which the ditch lies and

also in the office of the Secretary of the Territory—no time limit is specified. In California and Kansas, a copy of the notice must be filed in the office of county recorder (county clerk in Kansas) of the county where posted in ten days and work must begin in 60 days. In Montana a verified copy must be filed in the office of county clerk of county where posted in 20 days and work must begin in 40 days. In Washington a copy of the notice must be filed in office of county auditor of county where posted in ten days and work on storage works must begin within three months and on diversion works within six months. In Montana, in case of appropriation from adjudicated streams, the new appropriator within 40 days after completion makes application to clerk of district court who orders an examination by a competent engineer. A hearing after published notice is held and the court limits the appropriation in accordance with its findings. The procedure was adopted in 1907. Montana has had a state engineer since 1903 but his duties are confined to operations under the Carey Act. In view of the simple procedure in regard to the acquirements of rights existing in other states having state engineers the Montana innovation is both inexplicable and inexcusable. Any logical procedure should precede construction and not follow it.

Aside from the information and warning regarding the amount of unappropriated water an intending appropriator receives in the states requiring applications to a state engineer, he is materially assisted by definitely knowing the time limit for construction and application to beneficial use. In the states allowing the posting of notices the statutes merely provide that the right shall relate back to the date of posting if the work is completed with reasonable diligence—to determine which, in case of conflict, means litigation.

Instances do not often arise where the state engineer is called upon to reject an application for the reason of probable detriment to the public welfare. As previously stated this authority was given to the state engineer by the 1903 Utah statute but was interfered

with by the district court and was repealed in 1905. In the recent Oregon case of Cookinham v. Lewis (114 Pac. 88), decided Mar. 7, 1911, the provision of the Oregon 1909 statute authorizing the state engineer and board of control to reject an application where the proposed use is a "menace to the safety and welfare of the public" was upheld. It is noteworthy that Utah, which was originally characterized by centralized authority, should deny this power to a state official, and that Oregon, where the practice is so new and so foreign from that which preceded, should uphold it.

Water rights initiated by application to the state engineer are based upon beneficial use and perpetual unless abandoned or forfeited through nonuse—as was the case prior to the adoption of the new legislation. The only exception is the right for power purposes which has been limited in California (1911) and Oregon (1909) to a forty year term and on which an annual tax depending upon its magnitude is levied. The legislation regarding power rights will be considered in a later chapter dealing with rights of way over public land.

Conclusion. It should be emphasized in closing that the "new legislation" which has been discussed is dictated solely by good business sense. Instead of endless litigation regarding existing rights and no system worth considering regulating new appropriations, as in California, the new plan provides a full determination of existing rights in a single proceeding, the proper distribution of water by state officials according to such determination, and a complete control of the acquirement of new rights by a central office. It rests upon the same legal basis as the old and in no way attempts to interfere with or limit vested rights. It is applicable to any condition of topography or climate, as is illustrated by its acceptance by Nebraska in the east and Oregon in the west, by North Dakota in the north and New Mexico in the south. It leads the way from chaos and strife to order, harmony, and efficiency.

CHAPTER VII.

WATER RIGHTS ON INTERSTATE STREAMS.

The principles of either the doctrine of riparian rights or of that of prior appropriation have been thus far considered as developed within the various western states and no mention has been made of the right to use the waters of interstate streams. A little consideration only is necessary to recall to one the great number of rivers which either flow from state to state or form the boundary line between them. The Snake from its headwaters in the mountain lakes of Wyoming meanders across Idaho, crosses and re-crosses the Idaho-Oregon boundary line, flows through southeastern Washington and finally joins the Columbia, which is the boundary between Washington and Oregon. The tributaries of the Missouri rise in Wyoming and the main stream flows through or touches Montana, North Dakota, South Dakota, Nebraska and Kansas. The principal tributaries of the Colorado, the Green and the Grand, rise in Wyoming and after their confluence in Utah the main river flows into Arizona and becomes the boundary between Nevada and Arizona, and also between California and Arizona. The Rio Grande rises in Colorado and flows through New Mexico into Texas.

The waters of all of the great rivers mentioned are used to some extent in irrigation but with the exception of the Rio Grande, and possibly the lower Colorado, there is no likelihood of trouble in the near future between states regarding their use. The interstate streams which have been in controversy are the small mountain tributaries whose small flow was early appropriated. On such streams it is very common to find ditches heading in the upper state and irrigating lands in both the upper and lower states. Willey v. Decker (73 Pac. 210) dealt with Young's Creek flowing from Montana into Wyoming and back again into Montana, and the Supreme Court of Wyoming therein held (as reported in a head note):

> In the absence of statutory provisions, owners of land in Montana may acquire a legal right by prior appropriation to the use of the waters of a stream having its source in that state, and flowing thence * * * in Wyoming, by joining with owners of land in Wyoming in the construction of a ditch, and thereby diverting the waters of the stream at a point within Wyoming for the irrigation of lands in Montana and Wyoming.

Sage Creek is another small stream rising in Montana and flowing into Wyoming. In Howell v. Johnson (89 Fed. 556) the defendants contended that the plaintiff, having a water right under the laws of Wyoming, could not have a federal court enforce the same, and also that the rights to water were under the control of the legislature of Montana. The court, however, applied the doctrine of appropriation regardless of state lines and held for the plaintiff—diverting in the lower state, Wyoming. The lower prior diversion was likewise protected in Hoge v. Eaton (135 Fed. 411) wherein appropriators from Sand Creek in Wyoming complained of a later diversion of the creek in Colorado. The court therein said:

> The right to divert running waters for irrigating lands in an arid country is not controlled or affected by political divisions. It is the same in all states through which the streams so diverted may pass.

The waters of Sage Creek were again in controversy in Bean v. Morris which was decided by the

United States Supreme Court May 29, 1911 (221 U. S. 485). The Supreme Court therein said:

But with regard to such rights as came into question in the older states, we believe that it always was assumed, in the absence of legislation to the contrary, that the states were willing to ignore boundaries, and allowed the same rights to be acquired from outside the state that could be acquired from within. * * * * * There is even stronger reason for the same assumption here. Montana cannot be presumed to be intent on suicide, and there are as many if not more cases in which it would lose as there are in which it would gain, if it invoked a trial of strength with its neighbors. In this very instance, as has been said, the Big Horn, after it has received the waters of Sage Creek, flows back into that state. But this is the least consideration. The doctrine of appropriation has prevailed in these regions probably from the first moment that they knew of any law, and has continued since they became territory of the United States. It was recognized by the statutes of the United States, while Montana and Wyoming were such territory, * * * and is recognized by both states now. Before the state lines were drawn, of course, the principle prevailed between the lands that were destined to be thus artificially divided. Indeed, Morris had made his appropriation before either state was admitted to the Union. The only reasonable presumption is that the states, upon their incorporation, continued the system that had prevailed thereofore, and made no changes other than those necessarily implied or expressed.

The cases thus far referred to did not raise the doctrine of riparian rights, although it is thought to still exist in Montana. The conflict of doctrines was before the Federal Circuit Court in Anderson v. Bassman (114 Fed. 14) wherein the plaintiffs were farmers using the waters of the West Carson River in Nevada and the defendants were irrigators from the same stream in California. In the decision Judge Morrow points out that the doctrine of appropriation is alone recognized in Nevada while California uses the dual system of appropriation and riparian rights. On account of the conflict of accepted systems no attempt was made to ascertain individual rights of priority but the case was decided

by allowing the farmers in California the use of the entire stream for five days out of ten and a like use to those in Nevada.

Kansas v. Colorado.

By far the most important case dealing with the use of the waters of an interstate stream is Kansas v. Colorado (206 U. S. 91) decided by the United States Supreme Court May 13, 1907. It was initiated on May 20, 1901, by Kansas charging Colorado with the wrongful diversion of the waters of the Arkansas River. On May 21, 1904, the United States intervened in behalf of its operations under the Reclamation Act of June 17, 1902.

Kansas claimed that the waters of the Arkansas should be allowed to flow as they were accustomed to flow, and that by the diversions in Colorado not only were the property owners along the river deprived of its surface flow but all land owners within the drainage area were deprived of the beneficial influence of the subterranean flow.

Colorado contended that under the provisions of its constitution it is the owner of all waters within its borders. It further contended that the Arkansas River is substantially two rivers—the Colorado Arkansas rising in the Rocky Mountains and sinking, in times of low water, in the sands of Western Kansas, and the Kansas Arkansas which is formed by springs and surface drainage in Western Kansas east of the sink of the Colorado Arkansas.

The United States in its petition in intervention sets forth the vast acreage of public lands to be reclaimed under the provisions of the Reclamation Act, the reliance of the arid west upon the doctrine of prior appropriation, the inapplicability of the riparian doctrine where irrigation is necessary, the contention of Kansas that it is entitled to have the waters of the Arkansas flow uninterrupted and unimpeded into Kansas, the contention of Colorado that it is the owner of all waters within the State, and closes with the following:

That neither the contention of the State of Colorado nor the contention of the State of Kansas is correct; nor does either contention accord with the doctrine prevailing in the arid region in respect to the waters of natural streams and of flood and other waters. That either contention, if sustained, would defeat the object, intent, and purpose of the reclamation act, prevent the settlement and sale of the arid lands belonging to the United States, and especially those within the watershed of the Arkansas River west of the ninety-ninth degree west longitude, and would otherwise work great damage to the interests of the United.

Justice Brewer, who wrote the opinion, after showing that the case is one over which the Supreme Court has jurisdiction said:

Turning now to the controversy as here presented, it is whether Kansas has a right to the continuous flow of the waters of the Arkansas River, as that flow existed before any human interference therewith, or Colorado the right to appropriate the waters of that stream so as to prevent that continuous flow, or that the amount of the flow is subject to the superior authority and supervisory control of the United States. * * * * * Is the question one solely between the states or is the matter subject to national legislative regulation, and, if the latter, to what extent has that regulation been carried? * * * * The primary question is, of course, of national control.

The power of congress to preserve the navigability of streams is first examined with the conclusion:

It follows from this that if in the present case the national government was asserting, as against either Kansas or Colorado, that the appropriation for the purposes of irrigation of the waters of the Arkansas was affecting the navigability of the stream, it would become our duty to determine the truth of the charge. But the government makes no such contention. On the contrary, it distinctly asserts that the Arkansas River is not now and never was practically navigable beyond Fort Gibson in the Indian Territory, and nowhere claims that any appropriation of the waters by Kansas or Colorado affects its navigability.

The court then proceeds to examine "the question whether the reclamation of arid lands is one of the powers granted to the general government," pays particular attention to that part of section three of article four of the constitution reading: "The congress shall

have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States * * *," and concludes that the section grants to congress no legislative control over the states, but gives it authority over federal property within their limits. It is stated that the constitution is silent regarding the reclamation of arid lands as no such problem existed at the time of its adoption, that with the extension of national territory large areas of arid lands have been included, and that "it may well be that no power is adequate for their reclamation other than that of the national government. But if no such power has been granted, none can be exercised."

It is the last sentence quoted which has led many to believe that the Supreme Court in this case declared the Reclamation Act unconstitutional. The validity of that Act, however, was not in issue, but the question of national control—that is, the superior right of congress to legislate regarding the reclamation of arid lands—was. This should be clear from the following quotation which is from the paragraph immediately following the sentence referred to:

> It does not follow from this that the national government is entirely powerless in respect to this matter. These arid lands are largely within the territories, and over them by virtue of the second paragraph of section three of article four heretofore quoted, or by virtue of the power vested in the national government to acquire territory by treaties, congress has full power of legislation, subject to no restrictions other than those expressly named in the constitution, and, therefore, it may legislate in respect to all arid lands within their limits. As to those lands within the limits of the states, at least of the western states, the national government is the most considerable owner and has power to dispose of and make all needful rules and regulations respecting its property. We do not mean that its legislation can override state laws in respect to the general subject of reclamation. While arid lands are to be found, mainly if not only in the western and newer states, yet the powers of the national government within the limits of those states are the same (no greater and no less) than those within the limits of the original thirteen, and it would be strange if, in

the absence of a definite grant of power, the national government could enter the territory of the states along the Atlantic and legislate in respect to improving by irrigation or otherwise the lands within their borders. Nor do we understand that hitherto congress has acted in disregard to this limitation.

After quoting from Gutierres v, Albuquerque Land Company (188 U. S. 545) the court continues:

But it is usless to pursue the inquiry further in this direction. It is enough for the purposes of this case that each state has full jurisdiction over the lands within its borders, including the beds of streams and other waters. * * * * It may determine for itself whether the common law rule in respect to riparian rights or that doctrine which obtains in the arid regions of the West of the appropriation of waters for the purposes of irrigation shall control. *Congress cannot enforce either rule upon any state.*

It is certain from the above that the state and not the nation is superior regarding legislation concerning the use of public waters not navigable. As stated, the Supreme Court believed it to be the "primary question" involved in the case and, after such careful and direct consideration, the decision must be accepted as final.

Coming to the direct issue between the two states, it is held that the dispute must be so adjusted "upon the basis of equality of rights as to secure as far as possible to Colorado the benefits of irrigation without depriving Kansas of the like beneficial effects of a flowing stream." Tables are set forth in the opinion showing the increase in population, acreage irrigated, and value of farm products in the counties of eastern Colorado traversed by the Arkansas River. The court comments on the marked development thus evidenced and says that, as shown by the testimony, it is undoubtedly due to irrigation. A like examination is made of the census statistics for the counties of western Kansas with the conclusion that the use of the water in Colorado has not been of serious detriment to such counties.

The substance of the decision is well presented in the following paragraphs:

Summing up our conclusions, we are of the opinion that the contention of Colorado of two streams cannot be sustained;

that the appropriation of the waters of the Arkansas by Colorado, for purposes of irrigation, has diminished the flow of water into the State of Kansas; that the result of that appropriation has been the reclamation of large areas in Colorado, transforming thousands of acres into fertile fields and rendering possible their occupation and cultivation when otherwise they would have continued barren and unoccupied; that while the influence of such diminution has been of perceptible injury to portions of the Arkansas Valley in Kansas, particularly those portions closest to the Colorado line, yet to the great body of the valley it has worked little, if any, detriment, and regarding the interests of both states and the right of each to receive benefit through irrigation and in any other manner from the waters of this stream, we are not satisfied that Kansas has made out a case entitling it to a decree. At the same time it is obvious that if the depletion of the waters of the river by Colorado continues to increase there will come a time when Kansas may justly say that there is no longer an equitable division of benefits and may rightfully call for relief against the action of Colorado, its corporations and citizens in appropriating the waters of the Arkansas for irrigation purposes.

The decree which, therefore, will be entered will be one dismissing the petition of the intervenor, without prejudice to the rights of the United States to take such action as it shall deem necessary to preserve or improve the navigability of the Arkansas River. The decree will also dismiss the bill of the State of Kansas as against all the defendants, without prejudice to the right of the plaintiff to institute new proceedings whenever it shall appear that through a material increase in the depletion of the waters of the Arkansas by Colorado, its corporations or citizens, the substantial interests of Kansas are being injured to the extent of the destroying the equitable apportionment of benefits between the two states resulting from the flow of the river.

It must be emphasized that the Supreme Court in its decree did not attempt to make an equal division of the waters of the stream, but rather an equitable apportionment of benefits. Neither the rule of prior appropriation nor that of riparian ownership is followed, but the case is allowed to rest on the "cardinal rule of equality of right"—not to the means but to the results.

Legislation Regarding Interstate Streams.

In 1911 California enacted legislation making it unlawful to transport the waters of any lake or stream of the state "into any other state, for use therein." Colorado in the same year authorized a joint legislative committee to investigate the interference by the federal government or any state, corporation or individual with the control by Colorado of the waters within its borders. Wyoming, likewise in 1911, authorized its attorney general, under the direction of the governor, to bring such actions "as he may deem expedient to maintain the rights of the state and its citizens in the waters of interstate streams."

The only state which provides by statute for the recognition of diversions from interstate streams is Oregon. By the Act of February 23, 1911, it is provided that no permit for the appropriation of water shall be denied because the point of diversion, or any portion of the works, or the place of intended use, or any lands to be irrigated may be situated in some other state; "provided, however, that the state engineer may in his discretion, decline to issue a permit where the point of diversion described in the application is within the State of Oregon but the place of beneficial use in some other state, unless under the laws of such state water may be lawfully diverted within such state for beneficial use in the State of Oregon."

Legislation similar to that of Oregon should be enacted by all the states where rights are initiated by an application to the state engineer. Cases are constantly arising where applications are made for proposed systems lying partly within two states. Without definite legislation the state engineer has no guide to action—some engineers have approved such applications, others have rejected them. In New Mexico the territorial engineer approved an application for the irrigation of lands in New Mexico by a ditch heading in the Animas River in Colorado about six miles above the interstate line. The matter reached the courts and the Supreme Court of New Mexico de-

cided that "the territorial engineer was without authority to approve the application in question." (Turley v. Furman, 114 Pac. 278, decided March 4, 1911).

Not only is legislation necessary in regard to the initiation of rights for interstate ditches in order to protect the one so appropriating water, but it is badly needed in the interest of the general public in dividing the public waters among ditches entitled thereto. At present the only means provided by statute for distributing the waters of streams is the authority given the water commissioners, or water masters, to close, or partly close, headgates so that the later and upper ditches cannot take the waters belonging to prior appropriators. As such officers cannot act beyond the borders of their state they are powerless to control a ditch heading above their state line. The state engineer of Nebraska reports that one ditch diverting water from the North Platte in Nebraska near the state line was extended so that it headed in Wyoming about two hundred feet above the state line. It thereupon proceeded to take all the water desired while the ditches heading below in Nebraska and having earlier rights had their supply regulated, and in some cases entirely cut off, by the state officials in charge.

To remedy this condition the state engineer of Nebraska has recommended "that every canal flowing into this state have a controlling gate and measuring flume just within the state and in addition thereto a return canal whereby the water sought to be appropriated may flow back to the stream from which diverted." Other state engineers have made similar suggestions. In many cases the construction of a "return canal" would necessitate heavy expenditures and appear prohibitive, but the situation on many streams is sufficiently serious to warrant drastic action.

The 1911 California legislation referred to above is copied from a statute adopted in New Jersey in 1905. The constitutionality of the latter was upheld

by the United States Supreme Court in Hudson Water Company v. McCarter (209 U. S. 349). It is specifically stated in the opinion therein, however, that "The problems of irrigation have no place here * * *," so the decision will not necessarily control in attacks upon the validity of such statutes in the western states. In further support of their validity it is important to note that most of the earlier decisions regarding rights on interstate streams lay down the rule of prior appropriation regardless of state lines in the absence of statutory provisions to the contrary. The argument against such prohibitive legislation must be based on reasons of policy rather than those of law. As suggested in the quotation from Bean v. Morris above, each state stands to lose just as much as it can gain by such statutes.

Summary.—From a consideration of the cases dealing with interstate streams (the leading ones only being mentioned above) the following conclusions are justified. The state and not the nation is superior regarding legislation concerning the use of public waters, excepting only the matter of navigation wherein the nation controls. Between private appropriators in two states recognizing only the doctrine of prior appropriation it is very probable that that doctrine will be applied regardless of state lines. Between private appropriators in two states, one or both of which recognize the doctrine of riparian rights, the priority of appropriations will not be established, but the waters will be distributed on an attempted equitable basis suggested by the particular facts of the case. In a controversy between two states in their sovereign capacities the principle established in Kansas v. Colorado will undoubtedly be applied, and the Supreme Court will decide in accordance with what the facts of the case indicate to be an equitable apportionment of benefits. Legislation forbidding the diversion of waters from within a state to another state is probably legally sound but is based upon such shortsighted policy that it cannot prevail.

CHAPTER VIII.

RIGHTS OF WAY OVER PUBLIC LANDS FOR DITCHES AND RESERVOIRS.

As already stated in the first chapter, the first congressional legislation regarding rights of way over the public domain was the Act of 1866, now Section 2339 of the Revised Statutes of the United States. It acknowledges and confirms rights of way for ditches used in connection with "vested and accrued" water rights for "mining, agricultural, manufacturing, or other purposes." It is still in force for all unreserved public lands for purposes other than the generation of power.

By virtue of the provisions of the Act of 1866, one may go upon the public domain, dig his ditch, divert and apply water to beneficial use, and thus secure right of way over the land occupied. As the act recognizes only rights of way for ditches used in connection with vested water rights, it would seem that no right of way would attach until the completion of the works so that the water could be diverted. The California Court of Appeals has held otherwise, however, in de Wolfskill v. Smith (89 Pac. 1001.) The plaintiff had posted notices of water appropriation at abandoned oil wells, on unoccupied public land, from which water was flowing. She proceeded with her ditch construction with due diligence until enjoined by the defendant Smith who had made homestead entry on the land soon after the notices were

posted. Although the court points out that the posting of a notice "does not constitute an appropriation" and that the "right to water depends upon * * * making an actual appropriation of its use," it holds:

> By posting the notice appellant (plaintiff) from that time became vested with the right to the use of the stream of water then flowing from these wells, together with the right to construct over and across the land the necessary ditches to divert and conduct the same to the place of intended use.

It is certain that as against the government the water right is not considered vested until the diversion works are completed and ready for use. Under the provisions of the Reclamation Act the public lands within a reservoir site, known as Alkali Lake, in Antelope Valley, California, were withdrawn from entry. The Rickey Land and Cattle Company owned all the private land within the site and also irrigation ditches running from the West Walker River to the site, which it intended to use for storage purposes. It applied for right of way over the public land within the reservoir site under the Act of 1891, and, after the rejection of its application by the Secretary of the Interior, it proceeded with the construction of a tunnel outlet, claiming that its rights were vested under the Act of 1866. The government, in the interest of the Reclamation Service, thereupon instituted suit and the company was enjoined from prosecuting the construction work. (U. S. v. Rickey Land & Cattle Company, 164 Fed. 496.) In this case it was impossible to use the reservoir before the completion of an outlet tunnel and channel for the return of the stored waters to the West Walker River. After quoting Sections 2339 and 2340 of the Revised Statutes the court says:

> It is very clear that no one can under these sections acquire as against the government, a vested easement in and to public lands, for a reservoir site, until the actual completion of the reservoir, so that the waters to be impounded therein may be applied to the beneficial uses, contemplated by the irrigation system of which it forms a part.

This was the construction placed upon these sections by the Supreme Court, in Bear Lake Irrigation Company vs. Garland, 164 U. S., pages 1, 18 and 19, in which case it was said:

It is the doing of the work, the completion of the well, or the digging of the ditch, within a reasonable time from the taking of possession, that gives the right to use the water in the well or the right of way for the ditches or the canal upon or through the public land. Until the completion of this work, or, in other words, until the performance of the condition upon which the right to forever maintain posession is based, the person taking possession has no title, legal or equitable, as against the government.

Regardless, therefore, of the doubtful logic of the de Wolfskill case, no one planning any material diversion work should rest upon the Act of 1866, but should secure his right of way or permission to occupy public lands before initiating actual work.

Act of March 3, 1891: The Act of March 3, 1891, grants rights of way over public lands and reservations for irrigation ditches and reservoirs upon the approval of applications by the Secretary of the Interior. Such applications must be filed with the register of the land district in which the ditch or reservoir is to be located. The required contents of papers and maps forming the application are specified in detail in the regulations of the General Land Office, and the applicant must follow the directions to the letter. (Copies of the regulations will be sent on request to the General Land Office, Washington, D. C.) The right of way granted extends, where necessary for construction on maintainance, "fifty feet on each side of the marginal limits" of the ditch or reservoir, and the term "marginal limits" has been construed to mean the high water line. The right is also given to take from the adjacent public land material, earth and stone necessary for the construction work, but it has been held that this right is for construction work only and not for repairs or improvements.

The act specifically provides that "the privilege herein granted shall not be construed to interfere

with the control of water for irrigation and other purposes under authority of the respective states and territories." The land office accordingly does not attempt to regulate appropriations of public waters but simply insists upon a showing by the applicant that the state or territorial laws governing water rights have been complied with.

The act further provides that if any part of the ditch shall not be completed within five years after its location the right of way for such part shall be forfeited. Regarding such forfeitures, the Secretary of the Interior has held that the jurisdiction of the Interior Department is lost upon the approval of an application, and any action looking to the cancellation or annulment of the right of way must be brought in the courts. The regulations call for the filing of affidavits on the completion of the ditch or reservoir. If the line of the right of way as granted has been departed from, new maps and field notes must be filed and the right to the original but unused line relinquished.

The act also provides "that no such right of way shall be so located, as to interfere with the proper occupation by the government of any such reservation, and all maps of location shall be subject to the approval of the department of the government having jurisdiction of such reservation." Under this provision the Forest Service has prepared special regulations governing rights of way through the national forests. No construction work in a national forest will be allowed on such rights of way until the application has been approved by the Secretary of the Interior, or unless permission for such work has been specifically given, and as a condition precedent to such approval the applicant must enter into such stipulation and execute such bond as the Forest Service may require. For ditches and reservoirs occupying part of government reservations other than national forests, no application for right of way will be approved by the Secretary of the Interior until

it has been approved by the department in charge. If the right of way is upon unsurveyed lands, the map must be filed within twelve months after the official survey thereof, and no application for such right of way can be approved prior to the official survey.

The following paragraph from the regulations clearly states the nature of the grant of right of way under the act of 1891:

> The right granted is not in the nature of a grant of lands, but is a base or qualified fee. The possession and right of use of the lands are given for the purposes contemplated by law, but a reversionary interest remains in the United States, to be conveyed by it to the person to whom the land may be patented whose rights will be subject to those of the grantee of the right of way. All persons settling on a tract of public land, to part of which right of way has attached for a canal, ditch, or reservoir, take the land subject to such right of way, and at the total area of the subdivision entered, there being no authority to make deduction in such cases. If a settler has a valid claim to land existing at the date of the filing of the map of definite location, his right is superior, and he is entitled to such a reasonable measure of damages for right of way as may be determined upon by agreement or in the courts, the question being one that does not fall within the jurisdiction of this department. Section 21 of the act of March 3, 1891, provides that the grant of a right of way for a canal, ditch, or reservoir does not necessarily carry with it a right to the use of land 50 feet on each side, but only such land may be used as is necessary for construction, maintenance, and care of the canal, ditch, or reservoir. The width is not specified.

Act of May 11, 1898: The Act of May 11, 1898, authorizes the use of rights of way granted under the Act of 1891 for purposes subsidiary to the main purpose of irrigation, as is shown by the following clause from section two of the act:

> And said rights of way may be used for purposes of water transportation, for domestic purposes, or for the development of power, as subsidiary to the main purpose of irrigation.

In all cases the applicant must prove to the satisfaction of the Interior Department that the intended

use, other than irrigation, is really subsidiary thereto, and the proof must be especially clear where the development of power is contemplated.

Act of February 1, 1905: Section four of the Act of February 1, 1905, authorizes the Secretary of the Interior to grant rights of way through national forests to citizens and corporations of the United States "for municipal or mining purposes, and for the purposes of milling and reduction of ores." The nature of the grant is the same as that under the Act of March 3, 1891, except that no right is given to take any material, earth, or stone for construction or other purposes, and that the right of way is restricted to the strip necessary for the construction and maintenance of the works. Applications are made in the same way as those under the Act of 1891.

Act of February 15, 1901: Although other uses are specified in this act, it is now of importance only in regard to rights of way though the public lands and reservations for reservoirs and canals for the generation of electric power, and for electric transmission, telephone and telegraph lines. It is provided in the act that any permission given thereunder may be revoked by the Secretary of the Interior in his discretion. The right granted is a mere license, revocable at any time, and does not carry with it permission to take material, earth, or stone from the public lands or reservations for construction or other purposes.

For permission to occupy land outside of the national forests applications must be made in the same way in general as under the Act of 1891. Where the entire right of way lies within an Indian Reservation the application must be filed with the Commissioner of Indian Affairs.

Rights of Way for Power Purposes Through National Forests.

The Act of February 1, 1905, transferred the administrative control of the national forests from the Interior Department to the Department of Agriculture, so that the revocable license for electrical plants

(ditches, reservoirs, transmission lines, etc.) is now given under the authority of the Secretary of Agriculture. The Use Book—Water Power—of the Forest Service sets forth in detail the regulation and instructions regarding such licenses or "permits." The first, second, fifth and sixth paragraphs of the 1911 regulations are as follows:

REG. L-1. Preliminary water power permits will allow the occupancy of the lands of the United States within national forests for the purpose of securing the data required for an application for final permit and for such construction as may be necessary to preserve water appropriation during that period. Final water power permits will allow the occupancy and use of such lands for the construction, maintenance and operation thereon of works for the main purpose of the generation of electrical power. Preliminary or final permits for commercial water power works, or for non-commercial water power works of a capacity in excess of one thousand (1000) horsepower, will be granted, extended, and renewed only by the Secretary of Agriculture. Permits for non-commercial water power works of a capacity of one thousand (1000) horsepower or less, and for transmission lines, not a part of any water power works covered by a water power permit will be granted, extended and renewed by the District Forester. The Secretary of Agriculture alone may revoke water power permits.

REG. L-2. The "non-commercial water power works" will be applied to water power works owned and used solely by the permittees for one or more of the following purposes: In the operation of their own mines, or in the milling and reduction of ores therefrom; as auxiliary to irrigation works owned and operated by permittees; temporarily, in the construction of other works for which permission has already been granted the permittees; by municipalities for municipal purposes; or for such other miscellaneous uses not herein enumerated as may be determined by the Secretary of Agriculture to fall within this class. No charge will be made for the use and occupancy of lands for non-commercial water power works. All other water works will be termed "commercial."

" * * * REG. L-5. Occupancy and use of national forest lands is the sole privilege granted under a water power permit. In the issuance of such permits no attempt will be

made to adjudicate water rights, since water rights are acquired under state laws and adjudicated by the courts. Therefore no protests against the granting of an application, if based upon alleged lack of water rights, will be considered; nor, in general, will any allegation that the time of beginning or completion of construction has been or is delayed by litigation over water rights be accepted as a sufficient reason for granting any extensions of time.

REG. L-6. Unless sooner revoked by the Secretary of Agriculture, a final water power permit shall terminate at the expiration of fifty years (50) years from the date of the permit, and may then be deemed to be an application by the permittee for a new permit to occupy and use such lands as are occupied and used under the original permit: Provided, That the permittee shall, not less than nor more than four years prior to the termination of the permit formally notify the Secretary of Agriculture that it desires such new permit, and will comply with all laws and regulations at such time existing, regulating the occupancy and use for water power purposes of lands of the United States within the national forests.

Applications must be filed with the District Forester of the district in which the lands to be occupied are situated. In approving an application the time for beginning and completing construction is specified. Before a final permit for commercial water power works can be secured, the applicant must execute a stipulation providing among other things for the payment annually in advance of such charges as may be required by the Secretary of Agriculture, for the installation and maintenance of approved hydraulic measuring devices, and for the inspection of books and records showing stream flow and reservoir data and amount of electric energy generated.

Special State Legislation Regarding Water Rights for Power Purposes.

As previously stated, water rights for all purposes are generally considered to exist as long as the use continues, but water rights for power purposes have been limited to fixed periods in California and Oregon. The latter State in 1909 fixed the period at forty years with a preference right of renewal, for a period then

fixed by law, and California, at the regular legislative session of 1911, fixed the period at twenty-five years, but changed it to forty years at the special session of the same year. Each State by its new legislation levies an annual charge for power development depending upon its magnitude.

This special water power legislation was undoubtedly suggested by the regulations of the Forest Service. It is an attempt to regulate the so-called "power monopoly"—the underlying idea being that no permanent rights should be given and that the power company should in a small measure share its earnings with the State. Regarding the Oregon legislation State Engineer Lewis in his Third Biennial Report, (1909-1910, pages 82, 83) says:

> The annual tax idea seems to be based upon the fact that water is the property of the public, and those who enjoy a right to its use should pay something to the state for the privilege. It was not recommended or approved by the Oregon Conservation Commission. Whether the basis for electric power charges will be to "charge all the traffic will bear" as in railway rates, is a matter of uncertainty. The price of electric power is being constantly lowered through competition with steam producer gas, etc., where the cost of production has been greatly reduced in recent years through improvements in methods and machinery. Only those water powers will be developed where the cost of production will permit successful competition with these other power producing agencies. If, in addition to the necessary development cost a heavy annual charge per horsepower must be paid the state, it is conceivable that such charge may defeat rather than promote the conservation idea, as well as retard development. We will be consuming our limited supply of coal, for economic reasons, while our water power remains undeveloped and goes to waste year after year.

Comments on Water Power Legislation.

A little reflection should suggest that the present special legislation regarding water power falls far short of the desired goal—the protection of the public. When the right of way act of February 15, 1901, was

passed, little was known of practical rate fixing and the revocable license appealed to many as a needed curb. Later the annual charge was fixed by departmental regulation. The legislation and regulations are especially designed for the "commercial" power companies—that is, those engaged in public service. The right of the state to regulate public utilties and fix the rates of public service companies is now undisputed. For years the rates of water companies have been fixed throughout the entire country, later the railroads were taken in hand, and now public service commissions in a great number of states have been empowered to fix the rates of every public service company. The movement is so wide-spread and has been so generally accepted without litigation by the companies involved that its adoption by every state in the near future is certain.

Being assured that the state can and will insist upon rates which are reasonable, all that remains is to prevent the state or nation from giving to a public service company a property right which may be capitalized. Thus far no such preventive action has been taken. Although the permit to occupy the public lands is revocable and the water right in California and Oregon is but for a fixed period, they are rights which are bought and sold and on which the company expects the consumer to pay a good return. Likewise the annual charge made by state and nation must be paid by the consumer—even where rates are fixed by a commission, as it is a legitimate operating charge.

It is now generally conceded that the fixed period idea is wrong economically. Although a preference right to continue after the end of the period is promised the permittee, it is subject to future legislation, the nature of which can not be prophesied. The result is that the operating company must charge a comparatively high rate in order to return the capital invested within the fixed period, and the chance of poor maintenance near the end of the period is decided.

Many state and federal officials are now ready

to recommend an indeterminate license in place of the fixed term or revocable license. The indeterminate license is to be granted subject to the condition that the works may be taken over at any time by the state, or other public unit, at a valuation to be fixed by the state public service commission. As such taking is very unlikely in any given case and as it will become more and more so as the public service commission become older and stronger, the indeterminate license has almost the assurance of a perpetual right, conditioned only on proper operation. If such license is granted on the further condition that no rights of way, franchises or water rights secured from the state or nation can be capitalized for either rate fixing purposes or in cases of taking as above, the public is certainly protected in full measure.

State Versus Nation.

During the past few years withdrawals from entry of public lands for power sites have been made in large numbers. The Land Classification Board of the United States Geological Survey has charge of the examination of such withdrawn lands, and all future applications for rights of way for power purposes over public lands outside of national forests will be passed upon by the engineers of the board.

Comparatively recently a movement has been gaining weight to have the nation transfer the "power site withdrawals" in trust to the states. To many, of whom the writer is one, this suggestion is a step backward. In the last chapter 'attention was called to the doubtful water rights of interstate ditches. If the suggested step be taken the right of way of such ditches would be equally doubtful and the same question would be raised regarding interstate transmission lines.

In all phases of legislation the struggle should be for uniformity. There are but two federal departments concerned in the regulations regarding rights of way and the minor differences in their points of

view are being rapidly eliminated. It would take many years to bring the many western states into such unison. Conceding for the purposes of argument only that the technical men of the federal bureaus are not better trained than those in the state offices, the longer period of service and greater freedom from politics are sufficient to make the federal bureau the more effective. It must be remembered also that in each of the western states land matters and water matters are handled by different offices having little or nothing in common. The embarrassment would be thus increased.

A real difficulty in the way of an early settlement of the whole question is that the present is a transition period. The public service commissions with their full control of all public service companies are so new that their existence is either not recognized or their worth is questioned. When they have demonstrated their efficiency there will be no further excuse for either federal bureaus or state water commissions attempting to regulate the power business. It has been shown that the state and not the nation has control of water rights. There is no more reason, therefore, for the nation charging an annual tax depending upon the amount of power developed—which, of course, is a function of the water right—than there is for demanding of a railroad company, as a condition precedent to grant of right of way, that it must pay an annual charge depending upon the traffic handled. The nation as owner of the land should give a right of way or indeterminate license conditioned upon construction within a specified time and leave the question of regulation to the state public service commissions.

To repeat, the future congressional and state legislation regarding water power development will depend upon the state public service commissions. If they prove efficient, as there is every reason to believe, the public should insist that all other agencies stay within their proper spheres and stop tampering with the regulation of public utilities.

CHAPTER IX.

COMMERCIAL IRRIGATION ENTERPRISES.

A study of the historical development of irrigation in the western states shows that the small mountain streams along the overland trails and at or near the trading posts were the first to be used for agricultural purposes. As mines were discovered and operated the waters of the streams in the larger valleys were diverted by simple ditches on the lower or bottom lands. Later two or more settlers joined in the construction of larger ditches for the irrigation of land higher up on the stream, and in this way all easily accessible lands in the valley were irrigated. These individual and partnership ditches were sufficient for the lower lands.

It soon became known that the higher, or mesa lands, were better than the bottom lands, but the problem of digging ditches to them offered too many difficulties for local accomplishment. It was at this point that eastern and foreign capital was secured for the construction of irrigation canals to reach the higher lands. The size and number of such systems built during the eighties indicate that the promoter had an easy task, and when we consider the time and results of the early irrigation his success must be taken as a matter of course. The simple ditches then in use were the single instrument by which land worth nothing had been brought into a high state of cultivation

and great value. It was easy therefore to picture the rich returns of thousands of acres of such land, now barren and worthless, when under a well constructed canal. No argument was necessary to convince the investor that the real wealth lay in the water and that a system of selling water for irrigation was better than a gold mine.

We now know that most of the systems thus built were financial disasters and that the failure was not due to either lack of land or water, or want of engineering skill. The chief error was the neglect to "tie" the land to the water. The promoters and investors were right in believing that the land without the water must remain valueless, but they erred in thinking that the settlers on the land under the system would promptly take water on any terms dictated. The settler, unfortunately, was in most cases a mere "sooner," a waiter of fortune who hurried to the choice land, there to stay until bought out by the real home builder. During the eighties most of the land to be covered by the larger systems was government land and there were no statutes by means of which the canal company could protect itself against filings by "sooners" or secure a lien upon the land for its unpaid water charges. Every western state affords illustrations of large sums lost to its investors in such irrigation enterprises (now called commercial enterprises) and intelligent capital today will invest in no scheme where land and water do not go together. In fact, the attractive enterprise today is really a land deal to which the construction of the irrigation system is but incidental.

The following table (from the census statistics) shows the total area irrigated in 1909, the area irrigated in 1909 by commercial enterprises, and the percentage of the total irrigated by the latter. The commercial enterprise differs from the mutual or co-operative enterprise in that the former supplies water for compensation to parties having no interest in the works and the latter supplies water to stockholders only.

Acreage Irrigated in 1909.

State.	Total.	Commercial Enterprises.	Percentage by Commercial Enterprises.
Arid States	13,739,499	1,444,806	10.6
California	2,664,104	746,265	10.6
Washington	334,378	66,911	20.0
Texas (exclusive of rice)	164,283	73,440	16.3
Oregon	686,129	77,387	11.3
South Dakota	63,248	6,300	10.
Nebraska	255,950	24,834	9.7
Wyoming	1,133,302	87,935	7.8
Utah	999,410	70,227	7.0
Colorado	2,792,032	159,457	5.9
Montana	1,679,084	62,544	3.7
New Mexico	461,718	15.690	3.4
Idaho	1,430,848	44,872	3,1
Nevada	701,833	8,864	1.3
Arizona	320,051	80	.1
Kansas	37,479	.....	....
North Dakota	10,248	.....	....
Oklahoma	5,402	.....	....

As California has comparatively so large a percentage of commercial enterprises, it might be inferred that such projects are especially numerous and popular. The fact is, however, that the large acreage so served is under a small number of unusually extensive systems and that the mutual systems are the rule.

The commercial enterprises may be divided into three groups as follows:

First. Enterprises furnishing water on annual rental basis only;

Second. Enterprises selling water rights and charging either a fixed or variable annual rate in addition;

Third. Enterprises selling water rights and a pro rata interest in the irrigated system. The enterprises of this group therefore become mutual enterprises.

A few California examples of each group follow:

Examples of Companies "Renting" Water.

The Kern County Land Company diverts water from the Kern River for the irrigation of about 250,000 acres in the vicinity of Bakersfield. Although most of the water is used to irrigate its own lands, the company controls sixteen subsidiary canal companies. Water is supplied at the rate of 75 cents per cubic foot per second, flowing for 24 hours—equivalent to 37.5 cents per acre foot.

The San Joaquin and Kings River Canal and Irri-

ERRATA

Acreage Irrigated in 1909

PAGE 108	PRINTED	CORRECT
California	10.6	28.0
Texas	16.3	44.7

gation Company diverts water from the San Joaquin River for the irrigation of about 100,000 acres on the west side of the San Joaquin Valley in Fresno, Merced and Stanislaus Counties. The water rate has been fixed by the Boards of Supervisors as follows:

Stanislaus County.....$2.35 per cu. ft. per sec. for 24 hrs.
Merced County ..... 1.90 " " " " " " " "
Fresno County ..... 1.25 " " " " " " " "

The Pacific Gas & Electric Company owns and operates a number of canals diverting water from the Yuba and Bear Rivers in Placer County. The canals were formerly used for hydraulic mining but are now used for irrigation and municipal supply. No water rights are sold but the rates for the various kinds of service have been fixed annually by the County Supervisors.

Examples of Companies Selling Water Rights But No Interest in System.

The San Diego Land and Town Company owns the Sweetwater reservoir and canal system in San Diego County. It has sold land under its system with and without a water right, has sold water rights to other lands, and has furnished water on a rental basis to lands having no water right.

The California Development Company diverts water from the Colorado River for the irrigation of about 225,000 acres in the Imperial Valley. It has contracted with several mutual companies to supply water at the rate of 50 cents per acre foot—4 acre feet being sufficient for one acre. The mutual companies sell water rights on the basis of one share of stock to the acre, at the rate of $15 to $25 per acre, which amounts must be paid to the California Development Company. The water user pays an additional sum of about 20 cents per acre to the mutual companies for maintenance and operation.

The Fresno Canal & Irrigation Company and the Consolidated Canal Company are under the same management and divert water from the Kings River for the irrigation of about 360,000 acres in Fresno County. Water rights are sold at the rate of $10 per acre for

first class rights under the Fresno Canal and Irrigation system and $5 per acre for second class rights under that system and rights under the Consolidated. The rights are on the basis of one cubic foot per second to 160 acres. There is an additional annual charge of 62.5 cents per acre under the Fresno and 75 cents per acre under the Consolidated.

The Crocker-Huffman Land & Water Company diverts water from the Merced River for the irrigation of about 60,000 acres in the vicinity of Merced. Water rights on the basis of one cubic foot for 160 acres, are sold at the rate of $10 per acre, with an additional annual maintenance charge of $1 or $2 per acre.

Examples of Companies Selling Water Rights Carrying an Interest in System.

The Patterson Land Company diverts water from the San Joaquin River for the irrigation of 19,000 acres on the "West Side" in Stanislaus County—all owned by the company. The irrigation system has been transferred to the Patterson Water Company. Water rights on the basis of 2 to 3 acre-feet per acre are sold with the land at prices from $200 to $500 per acre. An additional annual charge of $3 for 2 acre feet and $1.50 for the extra acre foot is made. A share of stock in the water company is given with each acre sold, but the land company will retain management until 75 per cent of the land is sold, after which the land purchasers will be given control.

The Sacramento Valley Irrigation Company has purchased the old Central Canal and is extending the canal and lateral system to cover about 150,000 acres on the "West Side" in Glenn and Colusa Counties. The company is a land company and is purchasing all the irrigable land under the line of canal which it can secure. The Sacramento West Side Irrigation Company has been formed to operate the system. Water rights on the basis of 1½ acre feet per acre will be sold with the land at prices from $125 per acre upwards. An additional annual operation and maintenance charge will be made. A share of stock in the West Side Company will be given with each acre of

land, so that the land purchasers will ultimately operate and manage the system.

Most of the larger mutual companies in southern California were started as commercial enterprises of this group. There is probably no better example than the Gage Canal which is known as one of the most highly developed systems in the country. It diverts water from the Santa Ana River for the irrigation of about 10,000 acres near Riverside. The Riverside Trust Company originally owned the land and canal system. Each acre sold carried a water right of one-fifth of an inch and two shares in the Gage Company.

The Colorado Anti-Royalty Act.

In the early eighties a number of canal systems were built in Colorado which sold water rights and also charged an annual rate. This custom was stopped by the so-called Anti-Royalty Act of 1887, which made it unlawful for a ditch owner to accept payment corresponding to that for our right before supplying water at the annual rate. To evade the provisions of the Act water rights were sold providing that when water rights amounting to the estimated capacity of the canal were sold, the company would transfer the system to a new company formed exclusively of water users. In the early days the estimated capacity was placed so high that it did not become necessary to form the new company and relinquish the works. In more recent years, however, such contracts have been executed and the capacity fixed by the company in good faith and have been extensively used, not only in Colorado but in Nebraska and Oregon also.

The Regulation of Commercial Enterprises.

At an early date statutes were passed in a number of the western states authorizing the county supervisors, or commissioners, to fix the rate at which commercial enterprises should furnish water to irrigators. (The statutes of the last session in some of the states transfer this power to the railroad or public service commissions.) In the absence of such rate fixing the rates established by the water company controlled. The state and federal courts in California have

vacillated in their determination as to whether rates agreed upon in formal water right contracts, executed prior to the rate fixing by the county board, should be enforced after lower rates had been fixed by such board. On March 2, 1897, the California legislature amended the act providing for such regulation by adding a new section expressly stating that nothing in the original act shall be construed to "invalidate any contract already made." The new section was interpreted by the California Supreme Court in Stanislaus Water Company v. Bachman (152 Cal. 716), wherein it was held, "And under the present statute the contract rights prevail in all cases, the boards of supervisors being powerless to effect or interfere with them."

In the more recent case of Leavitt v. Lassen Irrigation Company (157 Cal. 82) decided December 24, 1909, the Supreme Court said:

> The language of this court in Stanislaus Water Company v. Bachman * * * must be construed in the light of the facts there presented. * * * *
>
> If it be conceived that Section 552 Civil Code, is designed to confer upon any particular consumer any special, permanent, and preferential right above what is here stated, that effort, being plainly violative of the Constitution, would be held void. The same declaration applies to the provisions of the act entitled * * * * approved March 12, 1889, and of the amendment of that act by the act approved May 2, 1897.

The Leavitt case deals with a prior and perpetual water right reserved by the former owner (the plaintiff) in selling a commercial enterprise to the company (defendant). It seems that such an exclusive and preferential right could be easily distinguished from the ordinary water right provided for in the amendment of 1897, but as so many capable attorneys hold to the contrary it would be unwise to organize an irrigation company with the idea of establishing by contract profitable rates which could not be lowered by the county supervisors.*

* Since the above was written the U. S. Circuit Court of Appeals, Ninth Circuit, has decided in Imperial Water Co. No. 5 v. Holabird (197 Fed. 4) that the water right contract therein considered is void.

Who Owns the Water Right.

The expression "selling water" is so commonly used that few laymen ever doubt that the irrigation company is the owner of the water right and that, in selling its system or in rate fixing, it is entitled to a considerable sum for such right. It is surprising to most, therefore, to learn that the Supreme Court of Colorado, so long ago as 1887, in Wheeler v Northern Colorado Irrigation Company (17 Pac. 487) said:

> It (the irrigation company) exists largely for the benefit of others; being engaged in the business of transporting, for hire, water owned by the public to the people owning the right to its use.

The question was not a direct issue in California until the recent case of San Joaquin & Kings River Canal and Irrigation Company v. Stanislaus County (191 Fed. 875) decided September 18, 1911. The company had brought suit against the county to enjoin the enforcement of water rates fixed by the County Supervisors. One of its contentions was that its water rights were worth $1,000,000, and that nothing had been allowed for them in the Supervisors' valuation. After a careful consideration of the authorities, Judge Morrow refused to accept the contention in the following words:

> The claim, as stated, is manifestly not sufficient to state a right of diversion. It must appear, further, that the complainant is either the owner of land for which the water is being appropriated for a beneficial use, or that the water is being diverted for the purpose of being carried by the complainant to consumers who own land for which the water is being appropriated for a beneficial use, and that the water is being so used. The complainant in this case is not the owner of any land for which the water is being appropriated. The complainant's right to divert the water of the river is therefore based upon and is measured and limited by the beneficial use of certain consumers for which the water is being appropriated. But, if the amount required by these consumers for a beneficial use is not 1350 cubic feet of water per second, then complainant has no right to divert that quantity of water; or if, for example, these consumers require only 100 cubic feet per second for beneficial use, then that would be the basis and measure and limit of com-

plainant's right to divert water from the river, and not the capacity of complainant's headworks, canals and ditches used in making such diversion. The water right must, therefore, be the right of the consumer and attached to his land, and not the right of the complainant attached to its canal system.

The irrigation company has appealed to the Circuit Court of Appeals and the case will probably be carried to the Supreme Court of the United States. The reader is referred to the opinion as an excellent exposition of the principles underlying not only the question of ownership of water rights but also the many other questions regarding rate fixing for public utilities.

As the cases now stand the Supreme Courts of Arizona, Colorado and Nebraska and the U. S. Circuit Court in California positively hold that the water right belongs to the user and not to the irrigation company. The only Supreme Court indicating to the contrary is that of Montana in Bailey v. Tintinger (122 Pac. 575) decided March 5, 1912. The case was simply one to determine the relative rights of a number of ditch owners and the Court, instead of applying the accepted rule that every appropriator must be given a reasonable time after the completion of the ditch in which to apply the water to beneficial use, holds that under the Montana statutes the appropriation must be considered complete upon the completion of the ditch. In the course of its opinion the court says:

> To deny the right of a public service corporation to make an appropriation independently of its users or future customers * * * would be to discourage the formation of such corporations and greatly retard the reclamation of arid lands in localities where the magnitude of the undertaking is too great for individual enterprise.

In view of the issue before the court the above expression should be considered a dictum only. It is another illustration of the dire need of rational water right legislation in Montana.

A further statement of the present and future status of commercial irrigation enterprises will be made in a later chapter after the discussion of other types of irrigation enterprises.

CHAPTER X.

THE DESERT LAND ACT AND THE CAREY ACT.

When the arid public lands were first occupied and irrigated there was no act providing for their alienation other than the homestead and pre-emption acts, both passed in 1862. The first act to specially provide for the conditions of the irrigation states was the desert land act of March 3, 1877, which, slightly amended, is still in force. The only public land and irrigation states in which the act is not operative are Kansas and Nebraska.

Only desert lands are subject to entry and it has been held that the following lands are not desert: Lands which produce native grasses sufficient to make an ordinary crop of hay in usual seasons; lands which will, without irrigation, produce a reasonably remunerative crop of any kind; lands bearing a natural growth of trees.

As entry may be made by any citizen, twenty-one years of age, a woman, married or single, is entitled to do so. Under the original act, one section, or 640 acres, was the limit of entry, but by the act of March 3, 1891, it was restricted to 320 acres.

To make entry an application must be filed at the local land office, showing that applicant is a citizen, or has declared his intention to become such; that he is 21 years of age or over; that he is a bona fide resident of the State in which the land lies; that he has not previously made desert land entry or taken an assignment of such; that he has not since August 30, 1890, acquired title to nor is claiming under any of the agricultural lands laws, including the lands applied for,

lands which in the aggregate exceed 320 acres; and that he intends to reclaim the lands described in the application through irrigation within four years.

The act of March 3, 1891, provided for the assignment of the entire entry, but the act of March 28, 1908, allows an assignment in whole or in part—except that not less than a 40-acre subdivision can be assigned. The latter act forbids the assignment of an entry to a corporation or an association.

With the application a map must be filed showing the proposed method of irrigating the land described, and a payment of 25 cents per acre must be made. Before the end of each of the first three years after entry proof must be filed at the local land office showing the expenditure of one dollar per acre during the year. This "annual proof" must be sworn to and must be corroborated by the affidavits of two reputable witnesses. Expenditures for ditches, dams, fences, roads, the first breaking of the soil, barns and other stock buildings, and wells for irrigation purposes, will be allowed. Expenditures for stock in an irrigation company to furnish water to land entered will also be allowed.

The entryman, or his assignee, is allowed four years from date of entry to satisfy the requirements of the act, but he may make final proof and receive patent as soon as he has expended three dollars per acre, has reclaimed all the irrigable land included in his entry, and has cultivated one-eighth of the entire area entered. When possible under the state laws, the final proof must show an absolute water right for the irrigation of the land entered. Up to six years ago the Department was very lax in passing upon final proofs, but under the present regulations a rigid examination is made of the water right and the extent of irrigation and cultivation. At the time of making final proof a payment of one dollar per acre must be made.

As there is no residence requirement in the desert land act other than to reside in the state and as payment for the land itself is only $1.25 per acre, the act has been very popular. In the past many irrigation

companies secured large areas of public land by stipulating with entrymen to furnish water right and take in return one-half or more of the land entered. Such contracts were illegal and under the present vigilance are not tolerated. It is allowable, however, in contracting with an irrigation company for a water right for a desert entry to stipulate that on default of the specified cash payment the entryman shall deed to the company a portion, or all, of the land entered. It is evident that the permissible contract may result in the same end as the prohibited contract, but, on its face at least, it is not an agreement to convey.

In the few states, like California, which have not accepted the provisions of the Carey act, the desert land act is the best method of securing the settlement of public lands under a private irrigation project.

The Carey Act.

In the last chapter reference was made to the many failures of private irrigation companies organized to irrigate public land—the principal cause for which being the inability of the company to restrain "sooners" or mere speculators from entering the land, and to secure a sufficient lien, upon such land as subscribed for water rights, for nonpayment of annual charges. To relieve this situation Congress in 1894 passed the so-called "Carey Act"—named after Senator Carey of Wyoming, who introduced it.

The act authorized the Secretary of the Interior, with the approval of the President, to contract with each state having desert lands for the free grant to the state of not exceeding one million acres of such lands "as the state may cause to be irrigated, reclaimed, occupied, and not less than twenty acres of each one hundred and sixty-acre tract cultivated by actual settlers, within ten years after the passage of this act." Before any segregation of land was allowed, the state had to file a map of the land and the plan proposed for its irrigation. As satisfactory proof, according to the regulations of the Secretary of the Interior, was made by the state "that any of said lands are irrigated, re-

claimed, and occupied by actual settlers, patents shall be issued to the state or its assigns for said lands so reclaimed and settled: Provided, That said states shall not sell or dispose of more than one hundred and sixty acres of said lands to any one person."

The original act was a great step in advance in that it allowed the segregation of all the public lands under an irrigation project and thus precluded the earlier type of speculator, but it failed to provide for a lien in case of nonpayment of water right charges. The act of June 11, 1896, met this need by authorizing liens to be created by the state for the actual cost of reclamation and reasonable interest, and by providing that patents shall issue to the state, without regard to settlement or cultivation, as soon as a proper irrigation system and ample water supply are furnished. It is specifically provided in this amendatory act that the United States shall in no way be liable for such lien, or any part thereof.

As stated above, the original act provided that the lands segregated must be reclaimed as specified within ten years after the passage of the act. No change was made in this severe requirement until the act of March 3, 1901, which provided that the ten years' period "shall begin to run from the date of approval by the Secretary of the Interior of the State's application for the segregation of such lands." It further authorizes the Secretary of the Interior in his discretion to grant an extension not exceeding five years.

The original act applied only to states. The act of February 18, 1909, extended the provisions of the act to the territories of Arizona and New Mexico. The act of March 15, 1910, authorized the Secretary of the Interior to temporarily withdraw from entry areas embracing lands for which a state proposes to make application, pending the investigation and survey preliminary to the filing of the regular application for the segregation.

The Secretary of the Interior has prepared regulations which must be followed by the states in making Carey act segregations. No segregation is now ap-

proved until examined on the ground and reported favorably by a government engineer. This course has been criticized by some as reflecting upon the states, but as the government is the owner of the land it should not be asked to grant such until all the conditions precedent thereto have been fulfilled to the satisfaction of its representatives. The following statement from the annual report of the Commissioner of the General Land Office for 1911 is in point:

> The importance of this (the examination of projects) can not be overstated, for not only will the lands remain segregated for a long period of time, if the order therefor is once made, but in making such segregation the department is practically committed to the feasibility of the proposition submitted by the state, and people thereafter dealing with the state are in a great degree entitled to regard the proposition of the state as having received the endorsement of the department.

The provisions of the Carey act have been accepted by Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington and Wyoming. During the fiscal year ending June 30th, 1911, 3,193,314 acres were segregated to the states. The total area patented under the act up to June 30, 1911, is 388,404 acres. The present activity in such projects is shown by the following statement by the Commissioner of the General Land Office (Annual Report, 1911):

> A conservative estimate would indicate that there will be 4,000,000 acres included in segregation lists for Carey act projects during the coming year (1911-1912). During the last fiscal year 1,650,000 acres of selections were examined. There have been withdrawn for exploration and survey under the act of March 15, 1910, 3,500,000 acres.

State Legislation.

Idaho and Wyoming were especially active in preparing for development under the Carey act. There was close co-operation between the officials of the two states and their original legislation in this regard was practically the same, and, as amended from time to time, has served as a model for the other states.

Under the special state legislation the operation

of the Carey act as far as the state is concerned is entrusted to a board. The irrigation project is not constructed by the state, but by an individual, association or company contracting with the state through the board. To initiate the enterprise the contractor files with the board a request for the withdrawal or segregation of the desired tract of desert public land and a proposal to construct the irrigation system, stating the source of water supply, the location and dimensions of the proposed works, the estimated cost of construction, and the price and terms at which perpetual water rights will be sold. The request must be accompanied by a certificate of the state engineer showing that the contractor has made proper application to appropriate the necessary water. A certified check of specified amount must be deposited with the board as a guarantee that the contractor will execute a contract with the state in case the segregation is made.

The state engineer is required to report on the feasibility of the scheme, and if his report be favorable the board applies to the Secretary of the Interior for the segregation of the desired tract. If granted, the board and the contractor execute an agreement which includes complete plans and specifications regarding the execution of the proposed work, and specifies the price, terms, and conditions under which water rights (carrying a proportional part of the system) will be sold to settlers. The contractor must furnish a bond, of amount prescribed by statute or regulation of board, as a guaranty of faithful performance of contract.

As soon as the segregation has been made and work initiated by the contractor on a proper basis, the board must publish notice stating that the lands segregated are open for settlement and the price which must be paid to the state for the land and to the contractor for the water right. Any one intending to settle within the project must first execute a water right contract with the contractor for the tract upon which he intends to file. He then applies to the board for the tract, and if successful secures a certificate of location on payment of one-half the price of the land fixed by the

state. He must establish his residence on the tract within six months after water is ready for delivery and must cultivate at least one-sixteenth of the land entered during the first year and at least one-eighth during the second year. He must make final proof within three years and complete his payment to the state. The latter payment is generally only fifty cents—twenty-five cents to be paid on entry and twenty-five cents on final proof. The statutes provide for the control of the system being given to the water users thereunder, but the condition precedent thereto varies greatly. Idaho gives control when 35 per cent of the total lien has been satisfied, while South Dakota leaves the control with the contractor until 90 per cent of the land has been sold. In Oregon the system must be turned over to the settlers within ten years.

Development Under the Carey Act.

The data for the following statistical statement of the work accomplished in the various states under the Carey act was taken from the last biennial reports (1909-1910) of the land or Carey act boards and of the state engineers. It was assembled by Mr. A. P. Stover, of Irrigation Investigations of the United States Department of Agriculture, in his very comprehensive paper entitled "Irrigation Under the Carey Act," published in the Annual Report of the Office of Experiment Stations for the year ending June 30, 1910. The data, with the exception of the area granted, is for the close of 1910.

Colorado.—The total area granted to the state, not including the Ute Indian Reservation grant, is 1,000,000 acres; the total area segregated, contracted and applied for was 1,121,940 acres; the area of reclaimed land sold to settlers was 34,000 acres; the number of projects being developed was 20; and the cost of water rights ranged from $15 to $45 per acre.

Idaho.—The total area granted to the state is 3,000,000 acres (2,000,000 acres having been added by Congress in 1908); the total area segregated was 2,630,833 acres; the area of reclaimed land sold to settlers was

270,184 acres; the number of projects being developed was 42; and the cost of water rights ranged from $20 to $100 per acre, with an average of $28 per acre.

Montana.—The total area granted to the state is 1,000,000 acres ;the total area segregated was 411,326 acres; the area of reclaimed land sold to settlers was 45,000 acres; and the number of projects being developed was 13.

Nevada.—The total area granted to the state is 2,000,000 acres; the total area segregated was 173,215 acres; and the number of projects being developed or investigated was 13.

Oregon.—The total area granted to the state is 1,000,000 acres; the total area segregated was 593,124 acres; the number of projects being developed was 16; and the cost of water rights ranged from $10 to $60 per acre.

Wyoming.—The total area granted to the state is 2,000,000 acres (1,000,000 acres having been added by Congress in 1908); the total area segregated was 1,390,365 acres; the area of reclaimed land sold to settlers was 130,000 acres; the number of projects being developed was 63; and the cost of water rights ranged from $10 to $65 per acre, with an average of $15 per acre.

Practically nothing had been done under the Carey act at the close of 1910 in New Mexico, South Dakota, or Washington. In Utah ten projects were being examined and one had reached the construction stage. Water right charges up to $250 per acre are proposed in Utah. It must be remembered that the maximum water right charge is fixed in the contract with the state, so that the state officials are to blame if excessive charges are allowed. The aim ordinarily is to give the contractor a good profit and at the same time to protect the settler. In Oregon the practice has been to fix the maximum charge at "the actual cost of construction plus seventy-five to one hundred per cent profit, to reimburse him for the risk, cost of selling and other necessary expenses in addition to the usual construction cost."

CHAPTER XI.

THE RECLAMATION ACT.

In the case of United States v. Hanson, 167 Fed. 881, the Federal Circuit Court of Appeals thus expressed itself regarding the need for the Reclamation Act:

Congress passed the Reclamation act to make marketable and habitable large areas of desert land within the public domain, which lands are valueless and uninhabitable unless reclaimed by irrigation and the irrigation whereof is inmpracticable except upon expenditure of large sums of money in the construction of a system of reservoirs and distributing canals. All previous efforts of the government to make these arid lands available for settlement had resulted in failure. By the Desert Land act of March 3, 1875, Congress has made provision for their use by individual settlers, and on March 3, 1877, had enacted further legislation to facilitate the reclamation of such lands by private entrymen, and in 1894, to provide for the irrigation of the arid public lands, had passed the Carey act, by which it proposed to donate to the states in which such lands were located, so much thereof, not exceeding one million acres in each state, as the state would cause to be reclaimed. These efforts having failed to accomplish the desired end, the Reclamation act was passed.

Although the above statement may be considered entirely too strong by many who have watched the development under the Carey Act, it is certain that the many western societies interested in irrigation labored for years to secure the passage of some act under which the nation itself would do the actual construction work in connection with storage and diversion projects. After many unsuccessful attempts the Reclamation Act was finally passed on June 17, 1902.

The Act creates a fund known as the "Reclamation Fund" from the moneys received from the sale of public lands in the following western states: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming. As the public lands in Texas belong to the state, the original Act did not include Texas but its provisions were later extended to Texas by special congressional and state legislation.

The Secretary of the Interior is authorized to do the many things provided for in the Act and in connection with the development of any project he must withdraw from public entry the lands required for the irrigation works and also must withdraw from all entry, except under the Homestead laws, the lands deemed irrigable under the proposed project. If later the project is held to be not feasible the lands so withdrawn are to be restored to entry. The two withdrawals mentioned above were originally called first form withdrawal and second form withdrawal. As the irrigable lands could be entered under the Homestead Act, although subject to all the limitations and conditions of the Reclamation Act, they were settled upon in many cases just as soon as it was known that a Reclamation project was proposed. As the project had not been sufficiently developed for the Land Office to know what lands would be irrigated, much land was occupied above the canal lines. Furthermore, as the project was slowly developed and as the settlers had few means of making a livelihood, there was much dissatisfaction. This difficulty was removed in the later projects by the Secretary of the Interior withdrawing all lands under the first form. There was some question as to the legal power of the Secretary to withdraw irrigable lands under the first form and the doubt was removed by a Congressional Act in 1910. By an amendatory Act approved February 18, 1911, it is provided that no entry shall be made and no entryman shall be permitted to go upon lands reserved for irri-

gation purposes until the Secretary of the Interior has established the unit of acreage, fixed the water right charges and the date when water will be delivered.

As soon as a project is found practicable and contracts have been let, the Act provides that the Secretary "shall give public notice of the lands irrigable under such project, and limit of area per entry, which limit shall represent the acreage which, in the opinion of the Secretary, may be reasonably required for the support of a family upon the lands in question; also the charges which shall be made per acre upon the said entry, and upon the lands in private ownership which may be irrigated by the waters of said irrigation project, and the number of annual instalments, not exceeding ten, in which such charges shall be paid and the time at which such payments shall commence." The charges announced by the Secretary in the public notice are determined with a view of returning to the fund the cost of the project and in practice are apportioned equally throughout the project.

The public lands subject to entry can be entered only under the provisions of the Homestead Act in tracts not less than ten nor more than one hundred and sixty acres. The entry is subject to the limitations and conditions of the Reclamation Act and the commutation provisions of the Homestead Act do not apply. The original Act placed the minimum area at forty acres. Before receiving patent the entryman must reclaim at least one-half of the total irrigable area of his entry and must pay the charges apportioned against the land entered.

Although private lands may be included within the project, no water right for such lands can be sold for a tract exceeding 160 acres to any one landowner, "and no such sale shall be made to any landowner unless he be an actual bona fide resident on such land or occupant thereof residing in the neighborhood of said land, and no such right shall permanently attach until all payments therefor are made." The Secretary has ruled that residence within fifty miles of the land

shall be construed as "residing in the neighborhood of said land." It has also been held that a corporation is entitled to hold land under a government project, but as a condition precedent thereto a showing must be made that the aggregate area held by the corporation and its stockholders in their individual capacities does not exceed one hundred and sixty acres. As each individual is allowed to hold one hundred and sixty acres of private land under such a project, there is little incentive for corporate holdings.

The Secretary is authorized to use the Reclamation Fund for the operation and maintenance of reservoirs and irrigation works. When the payments required by the Act are made for the major portion of the lands irrigated, the management and operation of the irrigation works is to pass to the landowners thereunder to be maintained at their expense under some form of organization acceptable to the Secretary; but "the title to and the management and operation of the reservoirs and the work necessary for their protection and operation shall remain in the Government until otherwise provided by Congress." It is noteworthy that the Act does not specify that the title to the irrigation works shall pass to the landowners. The only inference, therefore, is that the title to the works, as well as reservoirs, is to remain in the Government.

As in a number of other Congressional acts, it is expressly stated in this Act that it shall not be construed as interfering with state or territorial laws regarding the appropriation, use or distribution of water used in irrigation, or as in any way affecting any right to the waters of an interstate stream. The Secretary is directed to proceed in conformity with the local laws. The doctrine of appurtenancy is included in the following language:

> Provided, That the right to the use of water acquired under the provisions of this act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right.

The original Act provided that within each ten-

year period the major portion of the funds arising from the sale of public lands within any state or territory should be expended within the limits thereof. The section so providing was repealed by Congress in 1910 so that the Secertary is now at liberty to expend moneys on feasible projects regardless of the geographical source of such.

As stated above, the operations under the Reclamation Act are under the Secretary of the Interior. Prior to the passage of the Act in 1902, the Hydrographic Division of the Geological Survey had been making surveys of reservoir sites and proposed canals in many of the western states. After the passage this Division became the Reclamation Service under the supervision of the Director of the Geological Survey. In 1906 the Service was made a separate bureau of equal standing with the Geological Survey and with its own director.

One of the first projects undertaken was the Salt River project made up of lands about Phoenix in Arizona. As practically all the lands included were in private ownership the question immediately arose as to what lien should be given the Government to induce it to build the project. The lien in the case of public land is assured as the title cannot pass until all the water right payments have been made. To satisfy the requirement in regard to the private lands, the first so-called Water Users' Association was formed. The shareholders of this association, which is regularly incorporated, are the landowners under the project. The capital stock is fixed at the estimated cost of the project and each acre is entitled to one share of stock. The association enters into a contract with the Secretary of the Interior pledging itself to repay the cost of construction. Each shareholder in executing his stock subscription agrees that the payments due upon his stock shall be a lien upon his land and shares, and that the lien may be enforced by the association by foreclosure in the manner provided by law for the foreclosure of mortgages. The land is thus bound to the association and the association to the Secretary.

Although not necessary as far as the lien is concerned, the practice has been to compel entrymen on the public lands to become stockholders in the association. As provided in the Act, the payments must be paid in ten annual instalments and the practice is growing of fixing a graduated scale for the instalments, so that they may not be heavy during the first few years. The association levies assessments on the shares of stock from year to year to pay the instalments. As the Act provides that the water right payments must be made to the local Land Office, a certificate from such office is accepted as payment by the association.

The receipts from the sale of public lands to June 30, 1910, and excepting the five per cent of such proceeds set aside for educational and other purposes, were $65,584,801, and the estimated total receipts to June 30, 1911, including $213,998 from the sale of townsite lots, were $71,717,990. The net investment of this fund in reclamation works on June 30, 1911, amounted to $60,940,834.

No new projects have been undertaken since March 4, 1909, and up to that time thirty-two primary projects (that is, projects actually under construction) have been undertaken, the net investment in which on June 30, 1911, amounted to $59,989,158. The area of land to which water could be supplied under such projects on June 30, 1911, was 1,025.609 acres and the total area under such projects was 3,101,450 acres. The charges levied on lands under such projects are divided into "water right building charges" and "water right operation and maintenance charges." The aggregate return for the former to June 30, 1911, was $1,533,-176, and for the latter, $517,394.

A number of the projects are so large that it was originally planned to complete only a portion and allow the returns from the Act itself to pay for the extension work. In order to complete such projects in the immediate future, Congress in 1910 authorized a special bond issue of $20,000,000, no part of which can be spent on new projects.

As was to be expected where the operations are of such magnitude and cover so much territory, the constitutionality of the Reclamation Act was early attacked but thus far it has been upheld (United States v. Hanson, 167 Fed. 881; Burley v. United States, 179 Fed. 1). In a former chapter the Kansas v. Colorado case was discussed and it was stated that many at first supposed that the Reclamation Act was therein declared unconstitutional. The point made by the Court, however, was that Congress could not override state legislation in regard to the reclamation of arid lands and the Supreme Court went on to show that the Reclamation Act not only did not do so, but specifically provided for the observance of local law. In the paragraph of the decision showing the power of the Government to reclaim lands emphasis is laid upon the reclamation of lands within the territories and upon the reclamation of public lands within the states. In the two cases cited above as upholding the constitutionality of the Reclamation Act, the question of the power of the Reclamation Service to build projects for the irrigation of private lands only, within a state, was not raised. In the second of the two cases (Burley v. United States, 179 Fed. 1) the Court said:

> It would be strange if the national government could enter the territory of a state where there were no public lands of the United States requiring irrigation and no public lands through which water flows necessary for the irrigation of arid lands, and by legislation provide a system of irrigation for the private lands within the state and control its administration. It would, indeed, be a strange proceeding, and obviously wholly outside of the authority of Congress.
>
> But in this case the United States is the owner of large tracts of land within the states named in the act of June 17, 1902. The public welfare requires that these lands, as well as those held in private ownership, should be reclaimed and made productive. To do this effectively and economically with the available water supply large tracts must be brought into relation with a single system or project. These states having arid lands have accordingly acted upon the subject.

The Reclamation Act has now been in operation ten years and practically all of its thirty-two primary

projects are furnishing water to settlers or landowners by canals constructed by the Government or purchased as a part of the project. As the water right charges in a number of cases are in excess of $40 per acre, the burden of meeting the first payments is in many cases a heavy one. There have, therefore, been constant appeals for relief. In commenting upon a suggested relief measure before the Senate Committee on Irrigation, Secretary of the Interior Fisher recently wrote as follows:

> The passage of this resolution would lead to similar demands from a similar group of settlers on every project. The descent through successive general postponements to complete repudiation of a just debt may now be clearly discerned and easily made.
>
> The Reclamation act was passed in 1902 primarily for the benefit of the West and upon the request of Western Senators and Representatives. Many voices were raised against it in the East freely predicting that the beneficiaries of this large expenditure would never repay the cost of the works. These prophets of evil did not believe that the government and people of the United States possessed the patriotism and wisdom necessary to carry through such a great and beneficent enterprise by the expenditure of public funds on a basis of justice and efficiency. They held that in a popular government such an enterprise must be dominated by selfishness, and must degenerate into a scramble for special favors at the public expense. Nevertheless, the act was passed in the faith that the pledge of repayment embodied in its terms would be fulfilled. It is my deliberate conviction that the passage of this resolution would be a first and very influential step toward the breaking of that pledge and toward the failure of the beneficent reclamation policy. I desire to see that policy extended and supported by additional appropriations from the miscellaneous public revenue. But the one indispensable condition to its extension, or even to its continuance, is the repayment by the settlers of the cost of the irrigation works. Failing such a repayment not another dollar should be expended in the construction of new projects or in the extension of those already opened.

In framing the Reclamation Act the intention was to make the terms of payment no harsher than then existed under private projects and as no private projects allowed in excess of ten years, that term was

adopted. A great many viewing only the governmental character of the enterprise believe that this period should be extended to twenty or more years. The only reason suggested for greater leniency under government projects than under private projects is that the Reclamation Act necessitates residence upon or in the neighborhood of the land. It thus precludes the purchase of land by one who wishes to hold his present position and pay for the immediate improvement of the land by someone on the ground, with the intention of making the tract his home after reaching the productive stage. This course is possible under private projects and not only means that the absent owner and probably inexperienced farmer may in time possess a tract easily farmed, but also is a source of income to those residing on the project. The only object of the residence restriction in the Reclamation Act is to avoid speculation and by many it is believed that the restriction works against, rather than for, the project. It is certain that the period for speculation is the time prior to the delivery of water; that is, when the land values are comparatively low and when no payments need be made. As soon as the water is ready for delivery and the charges are imposed, traffic in land almost immediately ceases and the element of speculation disappears. It is probable that Congress will realize this condition in time and repeal the obnoxious residence clause.

The Reclamation Act, in brief, provides a revolving fund—first accruing from the sale of public lands in the western irrigation states—for the construction of irrigation works by the government for the irrigation of both public and private land and for the repayment of all moneys so expended by the settlers and landowners under the project. It aims to secure actual irrigation by providing that the title to the water right shall not be given until half of the land has been actually cultivated. The management of the canal system is turned over to the water users thereunder when a majority of the payments have been made.

CHAPTER XII.

IRRIGATION DISTRICTS.

Legislation for the formation of districts for flood protection, drainage and roads was long ago adopted in both the Eastern and Western states. Such acts secure for a community the benefits of protective or public improvement works through taxation, even though a minority of the property holders object. As the appreciation of the results of irrigation in the interior valleys of California spread during the eighties and as the obstacle in the way of community enterprises of the old partnership or ordinary corporation type seemed to be the larger ranchers who opposed the movement, the compulsory district organization was suggested. The first irrigation district act was adopted by the California legislature in 1887 and has since been generally known as the Wright Act, as State Senator C. C. Wright was the most prominent champion of the measure.

The California Irrigation District Act.

The California irrigation district act as amended and supplemented, was re-enacted in 1897 and is locally known as the Bridgford Act. Statutes very closely following those of California have been adopted in every irrigation state with the exception of Arizona (bill pending in legislature May 1, 1912), the Dakotas and Oklahoma.

The following presentation of the provisions of the irrigation district act is for the Bridgford Act of California, but it will serve as a general statement for such legislation in the other states as the points of difference are but few.

An irrigation district is initiated by a petition to the Board of Supervisors signed by "a majority in number of the holders of title to lands susceptible of irrigation from the proposed source and representing a majority in value of said lands." The petition must be published for two weeks and be presented at a regular meeting of the board, at which time a hearing is given to all those interested. If the action of the board is favorable it defines the boundaries and divides the proposed district into three or five divisions. Any party aggrieved by the action of the board may appeal to the Superior Court.

After favorable action by the board a date is set for an election on district organization, the notice for which must be published for three weeks. All qualified electors within the district may vote upon the organization and at the same time vote for the three or five directors, an assessor, a tax collector, and a treasurer. Two-thirds of all votes cast must be for the formation of the district in order to carry it. If the vote be favorable the board of directors so elected has control of the district business, causes surveys and plans of the irrigation system to be made and, after petition so to do, causes a bond election to be held. At this election a majority of the votes cast is necessary to carry the bond issue. The bonds bear interest at the rate of five per cent, are payable from the twenty-first to the thirtieth year and must be sold at not less than par.

The interest on the bonds and the operation and maintenance expenses of the district are paid by taxing all lands within the district on an ad valorem basis. The act specifically provides for the sale of property for non-payment of taxes as in the case of non-payment of state or county taxes.

Several amendments to the district act were passed at the regular and special sessions of the California legislature in 1911. The aim of all of the amendments was to secure a better financial basis for the sale of the district bonds. The principal act provides for a detailed examination of the feasibility of the districts by a commission, composed of the Attorney General, the State Engineer and the Superintendent of Banks, when called upon to do so by the district board of directors. When the commission approves the feasibility of any district project, the bonds of the district may be registered at the office of the State Controller and thereupon shall be considered legal investments for all trust funds and for funds of insurance companies, banks, etc., and are in general placed upon the same legal basis for purposes of investment as the bonds of cities and counties, school districts, or municipalities.

Points of Difference in Irrigation District Acts.

The principal points of difference in the various state statutes providing for irrigation districts are the provisions regarding state supervision; the exclusion of land included in the original petition; the qualifications of voters; the rate of interest on bonds and the authority to sell bonds below par; and the basis of assessment.

In Idaho, Oregon and Wyoming, the feasibility of the project must be approved by the state engineer. The operations under the acts in Oregon and Wyoming are just beginning but a number of districts have been operated successfully for many years in Idaho. In the latter state the original petition to the board of county commissioners must be accompanied by a map of the proposed district. The petition and map are referred to the state engineer for report and if his report be against the organization of the district the county commissioners must refuse to further consider the petition unless it be requested in writing so to do by three-fourths of the landowners in said proposed district. The plans and specifications for the proposed

system prepared after the formation of the district, must also be reported upon by the state engineer, but it is not provided that such plans must be changed in order to secure his approval.

In the California act it is provided that the board of supervisors shall not allow to be included in the proposed district any lands which will not, in its judgment, be benefitted by the proposed means of irrigation. This provision is the general one, but in Wyoming it is provided, "nor shall any land be included in such district if the owner thereof shall make application at such hearing to withdraw the same." In Oregon no land can be included in the district which lies within the limits of any city or town. In Colorado and Wyoming it is provided that no land shall be taxed for irrigation purposes "which from any natural cause cannot be irrigated, or is incapable of cultivation."

In California any elector residing within the district has the right to vote regardless of property qualifications—it being generally understood that to place limitations upon the right to vote would render the section unconstitutional. In Colorado and Idaho the voters must be resident freeholders, and the Oregon statute provides that a bona fide owner of land, whether a resident or not, may vote.

The rate of bond interest varies from five per cent in California to seven per cent in Idaho, and a number of states allow bonds to be sold at not less than ninety per cent of par value.

The basis for assesssment in California is the full cash value of the property. In Idaho the assessment is made in accordance with the benefits received as determined by the board of directors. In Colorado and Wyoming all lands within the district for the purposes of taxation must be valued by the assessor at the same rate per acre. This last method is analogous to that used by the ordinary irrigation companies in charging a fixed rate per acre.

The Constitutionality of Irrigation District Acts.

Owing to the compulsory nature of the irrigation district enterprise, it was to be expected that litigation should be initiated immediately after the formation of the first California districts by the landowners whose lands had been included against their wish. The validity of the act was assailed on every possible ground but was upheld by the Supreme Court of California and finally, in the celebrated case of Fallbrook Irrigation District v. Bradley (164 U. S. 112), by the Supreme Court of the United States. Extensive litigation has followed the inauguration of irrigation districts in other states but the validity of the several acts has likewise been upheld. There seems to be no question, therefore, that the many provisions of the irrigation district acts are legally sound.

The report of the case of Fallbrook Irrigation v. Bradley is interesting not only for the opinion by the court, but also for the argument against the validity of the act given by Joseph H. Choate, who in his argument presents the view of a great number of Californians at that time in regard to the questionable novel features of the act. The following extract from Mr. Choate's argument shows what he thought of the new system:

> This brings into view the unique and, as we believe, wholly unprecedented features of the scheme contrived by this act for the oppression of the farmers of California. We think that the statute books of all states and nations outside of California, prior to 1887, will be searched in vain, without finding another such example, and especially in view of the construction which has been given to certain details of this statute by the Supreme Court of California.

Operations Under Irrigation District Acts.

Although thirteen irrigation states have irrigation district acts, only eight had irrigation district enterprises irrigating land in 1909, and only nine had projects either completed or under construction in 1910. The following table taken from the advance sheets of the Thirteenth Census shows by states the acreage irrigated by irrigation district canals in 1909, and also

the acreage included within districts completed or under construction in 1910.

State.	Acreage Irrigated in 1909, by Irrigation Districts.	Acreage Irrigation Districts were capable of irrigating in 1910.
California	173,793	606,351
Colorado	115,304	487,370
Idaho	140,930	329,796
Montana	4,912	15,040
Nebraska	76,448	91,076
Oregon	1,500	5,980
Utah	8,455	10,802
Wyoming	11,800	27,050

A glance at the above table shows that there has been little irrigation district development outside of California, Colorado, Idaho and Nebraska and that such development has been most pronounced in the three states first named.

Irrigation Districts in California.

The Irrigation Investigations of the United States Department of Agriculture has gathered data for the publication of a report on irrigation districts in California. Certain statistical information from the proposed report was presented in a paper read by Mr. Frank Adams, in charge in California, before the Commonwealth Club of California. On account of the growing interest in the history of California districts, the following long quotation is made from Mr. Adams' paper:

Forty-nine districts were organized, and of these only 25 ever issued any bonds.

The statement that practically all of the 49 defaulted in large amounts should therefore be reduced one-half.

Of the 24 districts that issued no bonds, none at this time has any outstanding indebtedness. Eleven have been legally dissolved. Twelve have not been dissolved, although they are not active. One, the Walnut Irrigation District, covering about 900 acres of land in Los Angeles County, near Whittier, has been active and successful from the date of its organization and has never defaulted in any way in payment of indebtedness.

Of the 25 that issued bonds, 7 have made some kind of a settlement and have no outstanding obligations as districts at this time. Two have made settlement, but still have small outstanding indebtedness that either has been declared illegal or can not be found. Four have made settlement by exchanging

new for old bonds and are now active, and with the exception of one, whose reorganization is not yet complete and which therefore cannot be judged, are active and successful and can undoubtedly be counted on to pay both bonds and interest as due. Five have compromise settlements pending. Seven have apparently been totally abandoned, with no plan of settlement as yet seriously taken up.

Where settlements have been made they have been so different that it is hard to explain them with sufficient brevity for the purpose of this paper, and reference is therefore made to the table that will be submitted. The lowest basis of settlement has been 30 cents on the dollar, and the highest between 80 cents and 90 cents. Several compromised at 50 cents.

Of the 7 districts that apparently have been totally abandoned, and for which no plans of settlement have yet been seriously taken up, at least 3 were wildcat land-promotion schemes, pure and simple, and although reported favorably by engineers of reputation, apparently never had engineering justification, chiefly due to lack of water. The outlook for them is not encouraging, although in time they will without question be cleared up in some way. This might also be said of the other four.

Irrigation Districts in Colorado and Idaho

As shown by the above table from the Census report, both Colorado and Idaho have been active in irrigation district enterprises. It has been stated above that the irrigation districts in Idaho must be reported upon by the state engineer. The wisdom of such a provision and the dire need of it in Colorado is clearly shown by the following extract from the Biennial Report of the State Engineer of Colorado for 1909-1910:

It is believed that the organization and financing of irrigation districts should be subject to some sort of state control. The present irrigation district law, while facilitating the formation of mutual enterprises in which each man in securing the irrigation of his own land helps to irrigate that of his neighbor, unfortunately lends itself to the manipulation of shrewd and unscrupulous promoters who do not hesitate to take advantage of ignorance on the part of many landowners with regard to financial and engineering problems to promote districts which may or may not have within them the elements of success.

The experience of the State Board of Land Commissioners during the past two years, in which this Board has found

it necessary to cut in two in many cases the areas proposed for irrigation under the Carey act, indicates that a similar regulation and control of irrigation districts would be for the good of all concerned. The irrigation district law should be so modified that no issue of bonds for construction purposes can be made until the enterprise has been approved by the State Board of Land Commissioners. From now on this Board will always have an engineer as one member. It can, furthermore, always command the services and assistance of the state engineer's office in any investigation which it sees fit to undertake. It is, therefore, believed that it is the proper official organization to exercise control over irrigation districts.

The 1909-1910 Report of the State Engineer of Colorado contains statistical data for seventeen irrigation districts, voluntarily furnished by the district secretaries. The 1909-1910 report of the state engineer of Idaho contains reports showing the existing conditions of fourteen districts—which reports are made by the district officers to the state engineer in accordance with a provision in the district act.

The suggestion quoted above from the report of the State Engineer of Colorado should be incorporated in the district act of every state, although, as stated, Idaho, Oregon and Wyoming provide for reports on the feasibility of the projects by the State Engineer. The 1911 amendments in California are designed to give existing districts so desiring a financial standing and do not provide for an examination on the part of the state before the organization. The reason most generally given for the failure of the early districts in California was the lack of proper supervision although the fact that the movement was premature and attended by the difficulties incident to rapid colonizing of new territory was an important contributing cause of failure.

Advantages and Disadvantages of the District Organization.

When the first irrigation district act was passed in California in 1887, the only large irrigation enterprises existing were those owned by corporations (the so-called commercial enterprises) delivering water to

landowners having no interest in the works. A novel feature of the district plan was therefore the provision for community ownership. The status today is different. A large number of the commercial enterprises have become mutual or co-operative (that is, the landowners own the irrigation works) and the extensive projects now being operated or constructed under the Carey Act and the Reclamation Act will ultimately be managed as mutual enterprises. The district act is therefore no longer unique in this respect.

Owing to its compulsory provisions it is easier to organize a large project under the district act than to form a mutual company for the irrigation of the same land. The irrigation district has, furthermore, a political prestige unknown to the mutual enterprise and has, therefore, far greater chances of securing favorable legislation.

At present the great obstacle in the way of further development by irrigation districts is the difficulty of financing them. In this the district is also not unique as other forms of irrigation enterprises have the same difficulty in securing money for construction purposes. The argument is often made that school districts and municipalities which depend for their existence upon the irrigation district, have no difficulty in selling bonds while those of the irrigation district go unsold. Bankers and bond houses answer that it is due simply to a lack of confidence; that many irrigation districts and other irrigation enterprises have failed while there are few cases of school district and municipal bonds proving bad investments. As stated above, an attempt has been made to remedy this trouble in California by legislation, but the general view is that no amount of legislation can increase the sale of bonds or increase the confidence in such, and that the only way of proving to the bond-buying public that the security is good is to show a number of successful irrigation districts.

Two states, Idaho and Oregon, have provided for the use of the funds of the United States Reclamation Service in lieu of part or the whole of a bond issue.

There are certain legal obstacles in the way of the use of the "Reclamation Fund" for such purposes, even if there were a present surplus of money in such fund. The Reclamation Act provides that no water can be furnished to an individual owning in excess of 160 acres and also that the water user must be a resident upon or in the neighborhod of the land irrigated. An irrigation district organized under such restrictions would not be legally sound. It will be necessary, therefore, to eliminate the above restrictions from the Reclamation Act before the Reclamation Fund can be used to finance irrigation districts. Furthermore, at the present time the fund has been entirely allotted to regular Reclamation Service projects so that no relief from such source is in sight for the irrigation districts.

Owing to the difficulty in disposing of irrigation district bonds at the present time—especially in California—the irrigation district has to pay far more for its construction work than it should. As the bonds carry but five per cent interest and must be sold at par, the ordinary way of handling both bids for the purchase of bonds and bids for construction work is by means of a combination between contractor and bond buyer whereby the bond bnyer buys the bonds at par and is reimbursed by the contractor who adds twenty or more per cent to his usual contract price. It cannot be claimed, therefore, that one of the first aims of the irrigation district act—that is, the saving of the profit of the middleman—has been brought about. Until irrigation district bonds are on the same basis as other municipal bonds, there will be little economy in the construction of such work.

The irrigation district act provides that the districts shall have the power of condemnation and this provision in the California act has been considered favorably by the United States Supreme Court (Fallbrook Irrigation District v. Bradley (164 U. S. 112). In California and a number of other Western states it is generally believed—although not so specifically held—that only public service corporations have the

right of condemnation and that, therefore, a mutual irrigation company or a commercial enterprise for the irrigation of a large body of land for subdivision purposes would not have such right. (Although a digression, the point is here suggested that as the California legislature in 1911 passed a statute providing that "Irrigation in the State of California is hereby declared to be a public necessity and a public use, and the power of eminent domain may be exercised on behalf of such public use * * *," it is high time for a test case to be made by an irrigation company other than a public service corporation. There seems to be no good reason why a mutual company or a commercial enterprise irrigating a few thousand or more acres should not have the right of eminent domain as an irrigation district has.)

Aside from its power of eminent domain, the main advantage of the district organization is the authority of the majority to force the unwilling landowners to enter an irrigation enterprise. This power of the majority and the fact that (in most states) all voters within the district, whether property owners or not, may vote on matters pertaining to the management of the district, is thought by many to be detrimental to the best interests of the district. It is thought that under such conditions the management of the districts is likely to fall into the hands of politicians rather than the more able business men of the district. As to the compulsion exerted to bring unwilling landowners into the districts, this is now of less importance as the interest in irrigation is so great at the present time that there is little objection in any district to its formation and therefore this advantage is more theoretical than real in a number of instances.

CHAPTER XIII.

THE DESIDERATUM IN LEGISLATION REGARDING THE PUBLIC WATERS.

The legal principles governing the use of water are the result of judicial decisions rather than legislation. Just as the doctrine of riparian rights is the outgrowth of the old common law as interpreted by the English courts, so the doctrine of prior appropriation is the outgrowth of the customs of the pioneer miners and irrigators as interpreted by the Western courts. To continue to exist as common law a legal principle must be reasonably adapted to the time and the place. The strictly arid states long ago abrogated the doctrine of riparian rights because it was wholly unsuited to conditions there existing, and California has refused to follow the English common law rule of percolating waters for the same reason.

Riparian Rights.

The Western states still tolerating even a modified riparian doctrine are only semi-arid and naturally the older and larger cities are in the semi-humid section. It is therefore not strange that their supreme courts still find some virtue in the doctrine. Where irrigation is not the first aid to successful agriculture the riparian doctrine seems rational, and it would be at least unusual for one residing in a non-irrigated section and trained in the common law of the books to consider the doctrine of prior appropriation as other than a makeshift of frontier camps. During the last decade, however, irrigation has been given a tremen-

dous impetus and the great size of the many projects undertaken in the semi-arid states has done much to show the unsuitability of the riparian doctrine.

The doctrine of prior appropriation on the contrary is proving more and more adapted to the needs of growing communities with restricted water supplies. The cardinal principle being reasonable use and the elimination of waste, no ditch is allowed to divert water unless there is actual immediate need for the use thereof. The popular notion of the exclusive ownership of water finds no authorization in the books. On the contrary expressions like the following show the attitude of the courts:

> It is the policy of the law that the best methods should be used and no person allowed more water than is necessary, when properly applied, and thus a larger acreage may be made productive by its extended application. *Little Walla Irr. Union v. Finis Irr. Co.—Ore.*—124 Pac. 668.

As an instrument of the best development the superior claims of the doctrine of prior appropriation is perhaps nowhere better shown than in the very recent case of Schodde v. Twin Falls Land & Water Company, decided by the Supreme Court of the United States on April 1, 1912, (32 Sup. Ct. Rep. 479). The plaintiff owns lands riparian to the Snake River in Idaho and by means of a number of water wheels, from 24 to 34 ft. in diameter, elevated the waters thereof to irrigate his lands. The defendant company by the construction of the Twin Falls dam and the consequent back water destroyed the current and rendered his wheels useless. If the doctrine of riparian rights were recognized in Idaho the remedy of the plaintiff would have been unquestioned, but the doctrine was long ago abrogated. The Supreme Court in affirming a judgment of dismissal quotes with approval the following words of the trial court:

> It is unquestioned that what he has actually diverted and used upon his land, he has appropriated; but can it be said that all the water he uses or needs to operate his wheels is an appropriation? As before suggested there is neither statutory nor judicial authority that such a use is an appropriation. Such

a use also lacks one of the essential attributes of an appropriation,—it is not reasonable.

The opinion is but another illustration of the point that the doctrine of prior appropriation aims towards the highest use and greatest development, and is adapted to the time and the place.

Despite the weakness of the riparian doctrine, it is the accepted rule of property in the semi-humid states. As it has been fixed upon us by the courts, legislation attempting to abrogate it for lands now in private ownership, would be futile and should not be attempted. The suggestion has been made to lessen the statutory period now allowed a riparian owner in which to bring an action for wrongful diversion. It is a practical idea and worthy of adoption, but any change in the doctrine itself must be made by the courts.

Percolating Waters.

California is the only irrigation state which does not follow the common law rule that percolating waters belong to the owner of the soil. Excepting California there can be no need of legislation regarding the use of such waters.

In California the courts have departed from the common law and have laid down a new rule somewhat analogous to that of riparian rights in the surface streams. Under the new rule the owner of land overlying a body of percolating water is entitled only to a reasonable use of such upon his overlying land and may enjoin any diversion of such water to lands not overlying which will interfere with his reasonable use. Where a surplus exists, the court may fix the time and amounts for the pumping of percolating water to lands not overlying.

To be constitutional any legislation in California regarding percolating waters must be declaratory of the principles established by the courts. The scientific and technical questions which arise in the determination of the source and amount of percolating waters are so many and so difficult to positively answer, that few claimants will be satisfied with a determina-

tion not approved by the higher courts. Until administrative officers have demonstrated their efficiency in determining rights to the surface flow, there is little hope of them being given an opportunity to deal with percolating waters. At the present time the courts have established rules of their own which will conserve such waters, and those who are striving for better water legislation in California should concentrate their efforts in behalf of the surface supply.

Irrigation Versus Navigation.

As Congress has the superior right to legislate regarding the navigability of streams which may be used in interstate commerce, any conflict between the interests of irrigation and navigation rising out of the diversion of the waters of such streams cannot be anticipated and avoided by state legislation. In certain parts of the West, especially on the Colorado and Sacramento Rivers, the clash is imminent. As action by congress in favor of irrigation would be difficult to secure and of doubtful validity, the question must be settled by the communities involved. The investments in irrigation works and the industries dependent thereon are increasing each year, while other means for transportation are leaving little call for that by water.

As the War Department in order to maintain the navigability of a river may stop the diversions from the tributaries as well as from the main stream, it is clear that in most cases the material wealth of whole counties might be jeopardized. It seems certain, therefore, that public policy demands diversions of the summer flow even to the detriment of navigation, and that such conflicts will be adjusted to so allow.

"Monopoly" in Public Waters.

As ordinarily defined "monopoly" signifies that the "monopolist" has control over output and prices. So construed there can be no monopoly in the waters of our streams.

The various types of irrigation enterprises may be grouped as follows: United States Reclamation

Service enterprises; Carey Act enterprises; irrigation districts; co-operative or mutual enterprises; commercial enterprises; and individual and partnership enterprises. As explained in the previous chapters all of the types become mutual excepting the commercial enterprises—which supply water for compensation to parties who own no interest in the works. It has also been shown that the rates of the commercial enterprises are subject to regulation by public officers and that the water right of the enterprise belongs to the land owners and not to the operating company. It is therefore certain that so far as the water right is concerned no monopoly can exist in the irrigation business.

The expression is generally associated with the hydraulic development of electric power, but, as all public utilities are subject to rate fixing by the proper state authorities, any control of output and prices can be terminated. According to present decisions the water right of power plants is vested in the owner thereof, and this must always be the rule where the riparian right exists. In the case of appropriation rights legislation should be adopted providing that appropriations for power purposes may be authorized as indeterminate licenses and that the water right shall be considered of no value in rate fixing and in condemnation by the state or other public unit. There is no more reason why a power company should be allowed to capitalize a water right than there is for an irrigation company. In regard to other franchises the courts have been doing their part in attempting to reduce fictitious capitalization, and it is high time for all legislative bodies to positively provide for the elimination of any chance of capitalization in franchises granted by them or under their acts.

Legislation Regarding Appropriations.

Every western state has statutes fixing the procedure to be followed in making appropriations. Arizona, California, Colorado, Kansas, Montana, Texas and Washington have departed little, if at all, from the

method of posting notices. The remaining irrigation states have a central office, the state engineer's, in which applications for permission to appropriate water are filed and the conditions fixed under which the right may be perfected. Most states give this central office the right to reject an application for specified reasons—like lack of water supply, interference with prior rights, or detriment to the public welfare. Such statutes have been in force for over twenty years and there are practically no cases showing an abuse of the power of rejection.

A number of states have the central office publish the application so that all interested may be heard in regard thereto before final action thereon. This practice has proved of great benefit to both the old and the new appropriators. It gives present users an opportunity to know about and protest against any appropriation which might prove detrimental to their own, and it shows the intending appropriator the true situation before he expends any money in construction. Every state following the old method has instances of the construction of works whose operation was enjoined immediately after completion. The new method aims to eliminate such waste of time and money.

It must be emphasized that the new legislation controlling appropriations is based upon no new legal principles. It simply offers an improvement in the details of administration—just as a modern auditing system makes it possible for a business house to more easily control its operations. Under the new system the appropriator is under state control from the initiation to the completion of his project. It is a control. however, which protects, rather than prohibits, bona fide projects. In those states using the old method of posting notices the records are useless as evidences of work actually done, and one is never certain of the status of his right during construction.

In those states having no special legislation for the determination or adjudication of existing rights to the stream flow, the status of the various rights is settled only by ordinary court action. It is therefore

possible to have dozens of law suits over water rights on a stream without all the water users being brought into any one of them. The new system provides a method for the determination of all rights in a single proceeding. Colorado, Idaho, Utah, North Dakota, South Dakota, Oklahoma and New Mexico provide for adjudications directly by the courts, and Wyoming, Nebraska and Nevada determine rights through a non-judicial officer or board. Oregon in 1909, combined the two by providing for a determination by a board which must be affirmed or modified by the circuit court before becoming final.

As the states in which rights are determined by a board have secured the best results, and, as the Oregon method meets the approval of those who think such determination a strictly judicial matter, it is recommended that the Oregon method be followed in the states not included in the enumeration above. So far as bringing all claimants into one action is concerned many courts have held that they now have that power and have refused to consider the merits of a case until all claimants were made parties. The newer legislation, therefore, simply insures this being done in every case.

Although one may be successful in the ordinary lawsuits regarding water rights in those states in which the new legislation has not been adopted, he is without protection, other than further court action, if the wrongful diversions continue. Here again the abler courts have taken the matter into their own hands and have appointed officers to divide the waters in accordance with the decree and at the expense of the parties interested. The new legislation cares for the distribution by dividing the state into districts with water commissioners to apportion the waters therein in accordance with the determination of rights. The system was first introduced in Colorado in 1879 and has been accepted by all the western states with the exception of Arizona, California, Kansas, Montana. Texas and Washington.

The new legislation regarding water rights by

appropriation effectively provides for the three essentials; first, the determination of existing rights; second, the distribution of water among those entitled to its use; and third, the control of the acquisition of new rights. It is working so well in the many states in which it has been adopted that there is no good reason why it should not be generally accepted. It is certain that a more general knowledge of its many good points would dispel the existing prejudice against any change in such matters and bring about the desideratum in legislation regarding our public waters

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